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Perception of African Immigrants Living in the United States Towards Latent Tuberculosis Infection Treatment Hesitancy

Akinwale O. Obatayo
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Walden University

College of Health Sciences and Public Policy

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Akinwale Obatayo

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the review committee have been made.

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Walden University
2024

Abstract

Perception of African Immigrants Living in the United States Towards Latent

Tuberculosis Infection Treatment Hesitancy

by

Akinwale Obatayo

MPH, American Military University, WV, 2020

BS, Howard University, DC, 2017

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

May 2024

Abstract

About 80% of active tuberculosis (TB) cases are caused by untreated latent tuberculosis infection (LTBI), with most being foreign-born United States residents. Despite the availability of preventive therapies, African immigrants living in the United States are hesitant to accept LTBI treatment. Although researchers have explored LTBI treatment hesitancy among foreign-born United States citizens, no study has explored the perspectives of African immigrants living in the United States. This generic qualitative study explored the perception of African immigrants living in the United States on LTBI treatment hesitancy. Participants' inclusion criteria include those 18 years and older with a positive TB test, reside in the United States, speak English, and have access to videoconference. Data were collected through face-to-face remote interviews using semi-structured interview questions guided by the Anderson healthcare utilization model. Participants were recruited through LinkedIn, and eight participants were interviewed. Seven themes emerged. (1) LTBI treatment hesitancy is common among African immigrants in the United States, (2) LTBI treatment is not necessary, (3) Treatment hesitancy is caused by inadequate information on LTBI treatment, (4) LTBI treatment is imposed, (5) The government is not trustworthy, (6) LTBI treatment has harmful side effects, and (7) LTBI treatment is an instrument of stigmatization and discrimination. This qualitative study's new insight is treatment imposition, which raises awareness about the need to educate patients about their choices and respect their preferences. The findings of this study could be used to develop strategies to improve acceptance of LTBI treatment, prevent active TB, and contribute to the global goal of eradicating TB by 2035.

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Dedication

I dedicate this research to all African immigrants residing in the United States who have faced or are currently facing the challenge of testing for latent tuberculosis infection (LTBI) and the subsequent hesitation toward LTBI treatment, acceptance, adherence, and completion. The shared experience and perspective on this issue are invaluable for continuous knowledge and understanding.

I want to acknowledge the sacrifices you made by leaving your home country. As immigrants, you have faced unique struggles and challenges. Despite all the challenges, you remain strong and determined to improve your own lives and the lives of your families.

Finally, I dedicate this dissertation to all the public health advocates, researchers, and educators who are tirelessly working to eradicate tuberculosis worldwide. This study's findings can help develop effective public health policies and interventions at individual, community, and national levels to fight against active tuberculosis.

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Table of Contents

List of Tables	vi
Chapter 1: Introduction to the Study.....	1
Background of the Study	3
Problem Statement	5
Purpose of the Study	6
Research Questions.....	7
Theoretical Foundation	7
Nature of the Study	10
Definitions.....	13
Assumptions.....	15
Scope and Delimitations	16
Limitations	17
Significance of the Study	18
Summary and Transition.....	21
Chapter 2: Literature Review	23
Introduction.....	23
Search Strategy	26
Theoretical Framework.....	27
Literature Review.....	29
Latent Tuberculosis Infection	29
Epidemiology of LTBI in the United States	30

LTBI Diagnosis Resources	32
Challenges in Diagnosing LTBI Among African Immigrants Living in the United States	34
Treatment of LTBI in the United States	35
Effectiveness of Current LTBI Treatment Regimen.....	36
Risks Associated with LTBI Treatment Regimen	36
Barriers to LTBI Treatment Among African Immigrants Living in the United States	37
Prevalence of LTBI Treatment Hesitancy in the United States	40
Critique of Previous Research on LTBI Treatment Hesitancy	41
Summary	41
Chapter 3: Research Method.....	43
Introduction.....	43
Research Questions.....	44
Research Design and Rationale	44
Appropriateness of Generic Qualitative Design	44
Role of the Researcher	45
Methodology	48
Participant Selection Logic	48
Instrumentation and Data Collection	52
Pilot Study.....	54
Data Organization Technique	57

Data Analysis	58
Issues of Trustworthiness.....	60
Credibility	61
Transferability.....	61
Dependability	62
Confirmability.....	62
Ethical Procedures	63
Application for the Institutional Review Board (IRB)	63
Ethical Considerations	64
Participant Masking	66
Data Treatment and Handling.....	67
Summary.....	67
Chapter 4: Results	69
Introduction.....	69
Pilot Study.....	70
Research Setting.....	73
Demographics	75
Data Collection	76
Duration of Data Collection.....	78
Data Analysis	79
Etraction of Significant Statement	82
Issue of Trustworthiness	86

Credibility	87
Transferability.....	89
Dependability	89
Confirmability.....	90
Study Results	90
Theme 1: LTBI Treatment Hesitancy is Common Among African Immigrants in the United States.....	92
Theme 2: LTBI Treatment is not Necessary	93
Theme 3: Lack of Adequate Information on LTBI treatment.....	94
Theme 4: LTBI Treatment is Imposed.....	96
Theme 5: The Government is not Trustworthy.....	97
Theme 6: LTBI Treatment has Harmful Side Effects.....	98
Theme 7: LTBI Treatment is an Instrument of Stigmatization.....	99
Member Check Validation of Findings.....	101
Summary	102
Chapter 5: Discussion, Conclusion and Recommendation	103
Introduction.....	103
Overview	104
Interpretation of Findings	107
Theme 1: LTBI Treatment Hesitancy is Common Among African Immigrants in the United States.....	108
Themes 2: LTBI Treatment is Not Necessary	109

Theme 3: Lack of Adequate Information on LTBI Treatment	110
Theme 4: LTBI Treatment is Imposed.....	111
Theme 5: The Government is Not Trustworthy.....	113
Theme 6: LTBI Treatment has Harmful Side Effects.....	114
Theme 7: LTBI Treatment is an Instrument of Stigmatization and Discrimination.....	115
Limitations of the Study.....	116
Recommendation	118
Implications.....	121
Conclusion	124
References	127
Appendix A: Letter of Invitation	163
Appendix B: Recruitment Email and Research Study Flyer	165
Appendix C: Interview Guide.....	167

List of Tables

Table 1. Pilot Study Participant Demographics	72
Table 2. Study Participant Demographics	76
Table 3. Duration of Interviews	79
Table 4. Samples of Excerpts.....	85
Table 5. Codes, Categories, and Themes.....	84

Chapter 1: Introduction to the Study

According to the World Health Organization (WHO) 2022, as cited in Petersen et al., 2022, tuberculosis (TB) and infection caused by a bacterium (*Mycobacterium tuberculosis*) is one of the leading causes of death globally. Similarly, according to the WHO Global Tuberculosis (TB) Report 2022, World TB remains one of the world's deadliest infectious killers (Petersen et al., 2022). Although there is significant progress in the effort to meet the 2035 global target to eliminate TB worldwide, the Centers for Disease Control and Prevention (CDC) continues to report a significantly high incidence of TB and continues to pose a consistent public health concern (CDC, 2020). According to the WHO Global TB Report 2022, TB remains one of the world's deadliest infectious killers (Petersen et al., 2022).

There is a current estimate that over 13 million people in the United States are infected with TB, most of which are caused by the reactivation of untreated latent tuberculosis infection (LTBI; Schwartz et al., 2020). Verma et al. (2022) identified significant racial and ethnic disparities in individuals with TB disease in the US. Similarly, Filardo et al. (2022) identified that foreign-born U.S. citizens or residents have the highest rate, with 70%.

In 2021, 71% of TB cases occurred among foreign-born residents, the same proportion as in 2020 and 2019. Incidence (cases per 100,000 population) among U.S. foreign-born persons increased from 0.71 in 2020 to 0.79 in 2021, and among U.S. foreign-born persons from 11.71 in 2020 to 12.16 in 2021 (Filardo et al., 2022). According to the CDC (2020), 71.4% of individuals diagnosed with TB were born

outside the U.S.; 19.7% of persons with TB identify as Black, 30.2% as Latinx, and 35.3% as Asian.

Each day, over 4,100 people lose their lives to TB, and close to 28,000 people fall ill with this deadly disease. LTBI treatment is critical to prevent the development of active TB which is life-threatening. Global efforts to combat TB have saved an estimated 66 million lives since 2000 (Petersen et al., 2022). One recommended strategy to eliminate TB is to address and treat LTBI. To treat LTBI, the United States Public Health Department invests an exceptional effort to ensure free treatments for individuals living with LTBI. Despite the availability of free, safe, and effective treatment, hesitancy remains a significant barrier to treatment uptake and completion among African immigrants living in the United States (Petersen et al., 2022; Manful et al., 2020). The inability to identify or understand the underlying factors associated with LTBI treatment hesitancy poses challenges to improving LTBI treatment and prevention of active TB.

Although researchers have investigated LTBI treatment adherence and hesitancy in many foreign-born United States citizens, no research has been conducted to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy. This study explored the perception of African immigrants living in the United States on LTBI treatment hesitancy to understand how their perspectives impede LTBI treatment efforts and the target to eliminate TB. The findings of this study confirmed the existing factors and identified additional factors that contribute to low LTBI treatments and validated factors identified in the literature review.

Background of the Study

According to Ojo et al. (2022), African immigrants are at higher risk of developing TB due to risks factors like poverty, overcrowded living conditions and malnutrition. Parmer et al. (2022) conducted focus groups study with United States residents born in the six most common countries of birth among non-U.S.–born TB patients and determined that LTBI misconceptions among non-US-born populations could result in treatment hesitancy. Insight into immigrant perceptions of LTBI treatment is needed to help develop more effective communication messaging and improved compliance. Arakelyan et al. (2021) found that multidimensional external socio-ecological factors and health-seeking behavior may influence individuals' views of anti-TB treatment in high-income, low-incidence countries (Arakelyan et al., 2021). This result of this research study provided a guide to current and future studies to improve timely TB treatment.

Rustage et al. (2021) found that while LTBI treatment initiation and completion in migrants have improved, with 69% of positive-testing migrants initiating treatment, only 52% completing the treatment, which supports the need for additional studies to gain insight into the reasons for high LTBI treatment hesitancy and non-adherence. Spruijt et al. (2021) found that despite TB/LTBI education, misconceptions embedded in cultural beliefs about TB transmission persists. These findings indicate that additional insight is needed to identify barriers preventing African immigrants from being compliant with care for LTBI and will help inform current and future studies.

Bedingfield et al. (2022) found that African immigrants with infectious TB and LTBI experience stigma, language barriers, and poor access to government programs. This study provides background information on the experience of US African immigrants' on LTBI. Khan et al. (2022) found that 70% of TB cases in the United States occur among non-U.S.-born persons, and cases usually result from reactivation of LTBI likely acquired before the person's U.S. arrival. They also found that LTBI treatment hesitancy exists, despite the immigration requirement. This study indicates a low rate of LTBI treatment adherence and acceptance amongst African immigrants living in the United States.

Manful et al. (2022) found several factors associated with the failure to initiate and complete TBI treatment. These factors include the length of treatment, comorbidities, concern about side effects, and place of birth. This study provides some significant underlying factors that will help develop and structure this study's interview questions. Matakanye et al. (2021) found that culture and religion are significant drivers of TB perception among South Africans. This study provides insight into how lifestyles contribute to LTBI treatment hesitancy and recommends additional efforts to validate current information, improve TB knowledge, and correct misconceptions among the population with LTBI.

LTBI treatment among African immigrants living in the United States is an important issue that requires a multi-faceted approach. Although many studies have been conducted on LTBI treatment among immigrants of different origins in the United States, there has yet to be a study on the perspectives of African immigrants living in the United

States on LTBI treatment hesitancy. This study is needed to provide the most current information from one of the most LTBI-infected groups (African Immigrants) to help ascertain if new factors impede the LTBI treatment and validate the existing factors from other studies. This study's findings will provide information that will facilitate and promote LTBI treatment acceptance and adherence among African immigrants and other groups. This study's findings will significantly contribute towards the success of the 2035 global TB eradication program.

Problem Statement

The main problem to be addressed in this dissertation is the need for more study and literature on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy; to better understand the underlying factors contributing to LTBI treatment hesitancy. Although many studies have been conducted on foreign-born U.S. citizens to determine the reasons for the high LTBI treatment hesitancy, no study has explored the perspectives of African immigrants living in the United States on LTBI treatment hesitancy.

The inability to identify or understand the perceptions of African immigrants on LTBI treatment hesitancy poses a challenge to improving LTBI treatment and prevention of active TB. This generic qualitative study focused on exploring the perspectives of African immigrants in the United States on LTBI treatment hesitancy to address the gap in the existing literature.

Despite the prevalence of LTBI among African immigrants living in the United States, there is a lack of understanding about their perspectives and beliefs towards LTBI

treatment, which may significantly contribute to treatment hesitancy and decrease health quality and outcomes. More research is needed to identify and address the contributory factors to LTBI treatment hesitancy and barriers to LTBI treatment acceptance or adherence among this population to encourage effective prevention of active TB and promote holistic wellness.

Purpose of the Study

A gap in the literature and the lack of knowledge on the perceptions of African immigrants living in the United States poses a risk of uneven distribution of LTBI treatment efforts and the prevention of active TB. The purpose of this study was to explore the perception of African immigrants living in the United States. I used qualitative research in exploring the perception to identify the underlying factors contributing to treatment hesitancy.

A generic qualitative approach was designed to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy. Further, this generic qualitative study was designed to help fill the current gap in the literature, gain more knowledge on the reasons behind the low LTBI treatment acceptance, adherence, and high hesitancy, gain insight strategies to encourage LTBI timely treatment, the prevention of active TB, and support the WHO efforts towards global TB eradication.

Research Questions

RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

Theoretical Foundation

The concept that grounds this study includes the Andersen healthcare utilization model, a conceptual model that aims to predict the factors determining the uptake or use of healthcare services. The original model was developed by Ronald M. Andersen, a health services professor at the University of California Los Angeles (UCLA), in 1968 (Andersen, 1995). Qualitative research in health care services has become integral, and Andersen's behavioral model of health services is one of the most used models of health service utilization (Lederle et al., 2021).

The Andersen healthcare utilization model has been used to explore the factors that lead to the adoption, acceptance, initiation, delay, and refusal of available health services (Kim & Lee, 2016). The Anderson healthcare utilization model uses three dynamics: predisposing factors, enabling/disabling factors, and the need to predict healthcare service usage. Predisposing factors include characteristics such as race, age, and health beliefs. The enabling factors include family support, access to health insurance, and one's community. The need factors represent the perceived and the actual need for healthcare services (Pengid et al., 2022).

This research used the three dynamics of the Andersen Health Service Utilization Model to explore the perception of African immigrants living in the United States towards LTBI treatment hesitancy. Although Many researchers have used the This new insight provides a valuable opportunity for public health advocates to ensure that patients receive personalized treatment that caters to their specific needs. This approach can help avoid any potential perception of forcing treatments upon patients and instead, provide a tailored healthcare experience that promotes patient satisfaction and compliance. Andersen Health Service Utilization Model to determine health service uptake and adherence, it is noteworthy that the model concept continues to update and expand through many iterations.

Due to the high rate of hesitancy toward the most critical health services, diagnostic testing, vaccinations, and immunization programs, needed to prevent or manage infectious diseases like TB and others, Pengid et al. (2022) used Andersen's model of healthcare utilization model to investigate the factors associated with COVID-19 testing among adults in nine low- and middle- income countries. Through an adjusted logistic regression model, Pengid et al. found that predisposing factors such as education; enabling/disabling factors such as higher economic status, being a worker in the healthcare field, psychological distress, and urban residence; and need factors such as suffering from one or two chronic diseases; increased the odds of COVID-19 testing (Pengid et al., 2022).

Anastasiou and Heger (2021) used Andersen's healthcare utilization model to evaluate individual and systemic parameters associated with vaccination in European

Union citizens aged 55 years or older; they found that enabling factors such as increasing accessibility to healthcare services, such as increasing vaccination knowledge and offering free vaccinations, may encourage vaccination uptake and increase vaccination rates. Anastasiou and Heger (2021) suggest reaching out to individuals with potential access difficulties; this includes the unemployed and those living alone.

SoleimanvandiAzar et al. (2020) used Anderson's behavioral model to review the factors contributing to health service utilization among the general adult population; their results demonstrated that all three factors of the Andersen health service utilization model (predisposing, enabling, and need factors) influence health service utilization. For example, in most studies, gender (primarily female), marital status (married individual), age (older citizens), and unemployed status were positively correlated with higher health service utilization (SoleimanvandiAzar et al., 2020).

Studies also show some associations between regions of residence, level of education levels, income levels, and health service utilization; for example, most studies show that higher education, higher income, and being insured are directly related to healthcare or service utilization and significantly determine the likelihood of health service patronage or utilization.

The logical connection between Andersen's model of healthcare utilization and this research approach is that Andersen's model of healthcare utilization has been used extensively in public health qualitative studies to predict and determine healthcare services acceptance, treatment adherence, and hesitancy, particularly in the areas of

preventive medicine, which include but are not limited to diagnostic, immunization, and vaccination services.

This research used the three factors of Anderson's model of healthcare utilization to develop prompts, cues, and questions to explore the target audience's perceptions on LTBI treatment hesitancy. For example, the predisposing, enabling, and need factors was used to develop semi structured, open-ended questions that allowed the participants to express themselves freely. More details will follow in Chapter 2.

Nature of the Study

This study aims to explore the perceptions of African immigrants living in the United States on LTBI treatment hesitancy. After an intensive consideration of an array of methodologies, the qualitative research approach is the most appropriate and applicable approach to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy. The qualitative research approach is the approach of choice because it provides an ideal medium to explore and obtain primary data through the experience and perception of the participants (Evald et al., 2018).

Further, Renjith et al. (2021) considered the qualitative research approach as the most person-centered and humanistic way of exploring and uncovering the thoughts and actions of human beings. Furthermore, the qualitative research approach is applicable in the study of the nature of the phenomenon, especially to answer questions that translate into a gap in the literature to access and determine problem-solving interventions (Busetto et al., 2020).

The approach provides more in-depth information, provides new information, and allows study participants to provide answers to questions as they exist naturally. Different approaches to a qualitative method include but are not limited to ethnography, phenomenology, narrative, case study, grounded theory, and generic research approach (Renjith et al., 2021).

This research used the generic qualitative research approach, a descriptive approach employed when researchers want to gain an in-depth insight into a phenomenon through an approach that will work best. The generic qualitative approach does not owe or declare allegiance to any specific qualitative approach; instead, it employs all qualitative approaches toward the phenomenon of interest (Cooper & Endacott, 2007).

In addition, generic qualitative research is a descriptive methodology aimed at understanding how individuals make meaning of a phenomenon, or a situation based on what will work best in finding answers to the questions under investigation. This qualitative research used both inductive and deductive orientation to interpret research data. Inductive qualitative research approach to condense, analyze, and evaluate interview data. The inductive development strategy can be used for the extraction matrix if the phenomenon of interest lacks previous literature, if the purpose of the study is to provide a new point of view, or if data are primary and subjective (Moilanen et al., 2022). Deductive coding or concept-driven coding is a process whereby the researcher has a predefined set of codes, which may be from previous research or background knowledge, assigned to the new qualitative data (Renjith et al., 2021).

This research design specifically recruited African immigrants living in the United States who met the study participant inclusion criteria for individual interviews. The participants selection criteria requires that the participants must be African immigrants residing in the United States, must have tested positive for tuberculin skin test (TST) or other forms of LTBI diagnosis, be 18 years and older, able to speak English language and must consent to the research terms and conditions. Potential participants were screened to ensure they met the inclusion criteria and were carefully selected.

An interview protocol was developed under the IRB policies to obtain primary data. My goal was to ensure the study was conducted within the scope of ethical standards. Interview questions were piloted with a small group to forecast the feasibility, applicability alignment of the research question to the research design. Participant responses were audio-taped, transcribed verbatim and manually coded for thematic analysis through Zoom transcription tool, and manually edited to mitigate accent barrier.

The number of required participants in a qualitative study may range between eight and ten participants, however, the required number of participants was determined by data saturation (Hennink & Kaiser, 2022; Turner-Bowker et al. 2018). Saturation is the point where enough information has been collected to draw necessary conclusions, no new information is discovered, and any additional data will not add any valuable insights (Guest et al., 2021; Moura et al., 2021).

Participants that meet the study inclusion criteria stated above were compensated with a \$20 gift card and was sent after the interview. The data source to answer the

research questions includes participants' responses prompted by semi structured interview questions framed and guided by the Andersen health service utilization model.

The data analysis process included creating a set of themes and categories, identifying common or repetitive expressions and cluster themes, and creating textual descriptions with direct quotes to describe participant perceptions and experiences (Busetto et al., 2020). Many qualitative researchers have used this process, and it is considered a gold standard in producing credible and replicable findings (Kiger & Varpio, 2020).

Definitions

The definitions outlined in this section will be consistently used throughout this research and may have a slightly different meaning from the regular dictionary.

African immigrants in the United States: Refers to the individuals who migrated from another country into the United States to permanently reside with or without the intention of becoming a U.S. citizen. It is estimated that the 2017 population of African immigrants to the United States was about 2.1 million representing 5 % of the total foreign-born population of 44.9 million in the United States. This highly diverse group comprises individuals from 51 countries with diverse ethnic, linguistic, and educational backgrounds.

Foreign-born: The U.S. Census Bureau defines foreign-born individuals as those without U.S. citizenship at birth. The foreign-born population includes naturalized citizens, lawful permanent residents, refugees and asylees, legal non-immigrants (including those on student, work, or other temporary visas), and persons residing in the

country without authorization. The terms “foreign-born” and “immigrant” are used interchangeably and refer to those born in another country and later migrated to the United States (Ruggles et al., 2018, pp. 3-4).

Impeding factors: Includes physical environmental barriers, real and perceived social biases, and poor self-image.

Latent tuberculosis infections (LTBI): In biology, the term “latency” means a dormant state of an organism when either nutritional or environmental conditions are not conducive to growth and proliferation. In medicine, it is a stage of a disease when there is no clinical manifestation of symptoms (Khabibullina et al., 2022). Persons with latent TB infection do not feel sick or have any symptoms. They are infected with *M. tuberculosis* but do not have TB disease. A positive reaction to the TST or TB blood test is the only sign of TB infection. Persons with latent TB infection are not infectious and cannot spread TB infection to others.

Sub-Saharan Africa: is defined as all African countries except Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, and the disputed Western Sahara territory.

Treatment hesitancy: A delay in the acceptance or a refusal of a preventive or a treatment measure usually available at no cost. This could be in vaccines, immunization, or diagnostic tests (Akuffo-Addo et al., 2022).

Treatment regimen: A treatment plan that includes the dosage, the schedule, and the duration of treatment.

Tuberculosis (TB): TB is a disease caused by a bacteria called *Mycobacterium tuberculosis* that is spread from person to person through the air. TB primarily affects the

lungs but can also affect other vital organs, such as the brain, the kidneys, and the heart (Migliori et al., 2021). TB is spread from person to person when a carrier coughs or sneezes droplets of nuclei containing *M. tuberculosis* into the air. However, not everyone infected with TB bacteria becomes sick; hence, there are two types of TB conditions, latent TB infection, and active TB.

Assumptions

Assumptions are factors such as humans, methodology, process, or resources that influence the research findings (Gigerenzer et al., 2011, as cited in Clair et al., 2022). My first assumption for this study is that it will provide accurate information to find LTBI treatment hesitancy and impeding factors, like other studies. Second, this generic qualitative study confirms the factors hindering LTBI treatments identified in the literature review. For example, other studies identified stigma, shame, cultural beliefs, lack of social support, fear of treatment side-effects, and toxicity as the impeding factors to LTBI treatments. Third, this study would provide further evidence to support the already established knowledge of the various factors that hinder African immigrants from starting, following through, or completing treatments for LTBI. This study would provide an ideal medium to explore the underlying reasons behind these factors and provide more comprehensive insights that could lead to better solutions for LTBI treatment hesitancy.

It is assumed that this study will also identify the need for additional studies. Fourth, it is assumed that using the generic qualitative approach, explorative design, and semi structured interviews to collect data were adequate to explore and explain this phenomenon. Lastly, I assumed that participants would understand and support the

purpose of the study, be honest about their experience, and will not fabricate their responses to impress the researcher or the interview process.

Scope and Delimitations

The scope and delimitations of a study are the conscious choices made by the researcher concerning the limitation and restrictions that define the study parameter to ensure the study is conducted within the proposed boundary (Ross et al., 2019). I used generic qualitative research approach and a pilot study to explore the perception of African immigrants in the United States on LTBI treatment hesitancy. The participants were confined to only African immigrants residing in the United States. The participant inclusion criteria consists of African Immigrants who have lived in the United States for at least a year, are 18 years and older, can understand, read, and can speak the English language. Also, it was required that participants have had a positive LTBI diagnosis at some point in their lifetime or at least know someone who has tested positive for LTBI.

This generic qualitative study adhered to an explorative design and only collected data through semi structured interviews. Although this study's participant size was anticipated not to exceed 20 participants, the number of participants was determined by the data saturation point, and the recruitment period was 1 month. The findings from this study did not explore or account for any group other than African immigrants living in the United States. This study used the constructs of Andersen's model of healthcare utilization model. These constructs include predisposing factors, enabling/disabling factors, and the need to predict healthcare service usage (Lederle et al., 2021).

I was mindful of how my views and experience could possibly influence the research process and findings. It is important to note that the researcher cannot prove that the research study's findings will be applicable; rather, the researcher can only provide readers with evidence that the research findings could apply to other populations, situations, or contexts; (Johnson et al., 2020). Transferability can be established by providing readers with evidence that the research findings could be applicable to other populations, situations, and time, hence the readers will deductively determine the transferability of this study.

Limitations

A study limitation is a characteristic element of study methodology or research design and is outside the researcher's control. Unlike study delimitation, which sets boundaries for a study and depends on the researcher's choice, study limitations cannot be manipulated by the researcher, and it influences the validity and reliability of research findings (Ross et al., 2019). Studies show that LTBI is a sensitive topic (Stagg et al., 2020; Wong et al., 2021); hence, participants are expected to be reluctant to give their frank or honest opinion.

Also, researcher's background knowledge may take precedence over the findings. I limited my personal bias by refraining from my background knowledge, opinion, and thoughts. Although my plan was to encourage participant honest response, it should be noted that the researcher's ability to control the participant is limited.

Significance of the Study

Although many studies have been conducted on LTBI issues among foreign-born United States residents, there is no study conducted to specifically explore the perspectives, thoughts, beliefs, and experiences of LTBI treatment hesitancy among African immigrants living in the United States. This generic qualitative study is significant because the findings build on existing literature and fill a significant literature gap by identifying additional factors contributing to LBTI treatment hesitancy or non-adherence among African immigrants living in the United States and identifying the need for further studies.

Verma et al. (2022) identified significant gaps in LTBI referral and treatment initiation. According to Verma et al., The expansion of LTBI treatment access to primary care could be a solution to mitigate health inequities among the at-risk group. Pan et al. (2020) identified that reaching the end TB Strategy goal would be challenging. However, the outcome of this study provided insights that can encourage a timely treatment of LTBI and prevent active TB. This generic qualitative study identified and effectively communicated the common themes contributing to LTBI treatment hesitancy among African immigrants living in the United States and recommend additional studies as needed.

Possible recommendations from this study will include but not be limited to additional studies on the perspectives of African immigrants living in the United States with comparison to other Immigrant groups in the United States, gender-based perception towards LTBI treatments, and how the socio-economic status of the target audience

contributes to their experience, beliefs, and perceptions towards LTBI treatment hesitancy.

Public health departments, agencies, and organizations like the CDC and WHO can benefit from the findings of this study by identifying the aspects of current policies, regulations, or systems of preventive medicine that need updates or changes. This study will contribute to public health archives on practice, outcomes, and determinants of health behaviors among African immigrants living in the United States. In the clinical setting, the findings from this study will contribute to scientific knowledge and will provide significant information to the vulnerable population. This study addressed LTBI treatment hesitancy among African immigrants living in the United States as a topic that requires an urgent public health intervention and offers evidence-based recommendations.

TB is one of the world's deadliest infectious diseases that requires all eradication efforts (WHO, 2022). The findings from this generic qualitative study may contribute to positive social change by identifying some factors impeding the current public health strategies and efforts to promote LTBI treatments. This study identified the need to develop and effectively convey public health education to the African immigrants living in the United States. By analyzing the participants' perceptions, we gained valuable insights into the reasons behind the inefficacy of current strategies for LTBI treatments. The results of this study can be leveraged to devise a more effective and constructive approach. This study will have a far-reaching effect in supporting the WHO's effort to eradicate TB in the United States and global TB eradication.

Stagg et al. (2020) identified that non-initiation of treatment after diagnosis could be due to many complex factors, which include but are not limited to the stigma, lack of LTBI treatment awareness, lack of accessibility of treatment, costs associated with seeking or visiting the hospital, fluctuation in clinical services. This study successfully identified a combination of both previously known and novel factors that were not found in earlier studies, thus contributing to a better understanding of the subject matter at hand.

Liu et al. (2018) reviewed 44 studies to investigate the rates of initiation and completion of LTBI treatment, factors that contribute to LTBI treatment nonadherence, and current interventions to improve LTBI treatment adherence in countries with low TB incidence. They found that the fraction of people initiating and completing treatment varied from 24- 98% and 19-90%, respectively this indicates a high rate of LTBI treatment hesitancy in the United States (Liu et al., 2018). While the study did not mention the inclusion of African immigrants living in the United States, the main barriers to treatment adherence include the fear of adverse medication effects, such as toxicity, stigma, financial burden, lack of social support, length of treatment duration, financial implication, and limited access to clinics (Liu et al., 2018).

Many qualitative studies found that individuals living with LTBI express a deep concern for fear, anxiety, and stigma (Wong et al., 2021). There are potential psychosocial challenges in individuals living with LTBI despite the absence of active TB symptoms or clinical manifestations. This study identified and confirmed stigma, fear, and anxiety as contributors to LTBI treatment hesitancy among African immigrants living in the United States.

This is unique research because it focuses on a hidden problem, provide common themes that contribute to the cause and demonstrate a concern for the continuous care of the public. The target audience (The readers of this study's findings) may gain a positive sense of inclusion. Gaining a sense of inclusion may promote human dignity and motivate individuals to contribute to the government's preventive medicine strategies.

Summary and Transition

Many studies have investigated the uptake, adherence, and hesitancy of LTBI treatment amongst different ethics and nationalities living in the United States and other countries. However, there is no study on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. It is crucial to explore the perception of African immigrants because studies show that African immigrants rank very high among the US foreign-born citizens living with LTBI (Filardo et al., 2022). This study focused on the perception of African immigrants in the United States on LTBI treatment hesitancy.

This study was also designed to provide a medium to validate the current knowledge on the impeding factors that contribute to LTBI treatment hesitancy and gain a better understanding of the behaviors that contribute to LTBI treatment hesitancy. The knowledge from this study will help draw the attention of public health researchers to identify more gaps and facilitate the recommendation for additional studies. Chapter 2 will provide a review of the literature with the key components that will evaluate the major variable of the study to demonstrate the current knowledge. Chapter 2 will also

provide adequate information on current information on the research problem, establish the literature gap and expand on the need for this study.

Chapter 2: Literature Review

Introduction

Since the announcement of the discovery of TB in 1882, it has remained a global burden. Although the rate of TB is slowly reducing, it remains a global burden (Xue et al., 2022). Many studies have been conducted to identify the underlying factors for LTBI treatment hesitancy among immigrants from different continents; however, no study has been conducted to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. I conducted a generic qualitative study to explore participants' perspectives of African immigrants living in the United States on LTBI treatment hesitancy.

Studies show that LTBI is very common in the United States, and LTBI is more prevalent among foreign-born U.S. residents (Yelk-Woodruff et al., 2022). In 2021, Askar et al. (2022) identified an increase in LTBI among incoming international students in the US from 5.7% to 8.1% in 2019 and 2021. According to Filardo et al. (2022), there is a higher rate of LTBI among foreign-born U.S. residents. LTBI continues to be a public health issue; hence it should be reported to the TB control center within 48 hours of diagnosis, and TB preventive treatment should commence immediately (CDC, 2020). Although TB preventive treatments are available, research shows a high rate of LTBI treatment hesitancy or incompleteness of the treatment regimen (Huaman & Sterling, 2019). Hannah and Dick (2020) identified that only 18% of people that initiate LTBI treatment completed their treatment regimen, indicating a high rate of treatment hesitancy.

This chapter describes the study by re-establishing the phenomenon of interest and the topic under consideration from a descriptive and argumentative point of view to justify the research gap and why the study is needed. This chapter also established, define the operational variables, and the scope of the related literature to be reviewed. The scope of literature was limited to works within the last five years with a focus on LTBI. I accounted for the scope of the relevant literature being investigated; the relevant literature impeding factors to preventive medical treatment concerning LTBI treatment, active TB prevention and intentional exclusions. This review did not explore studies older than five years. This chapter provides the conceptual definition of the study constructs, including African immigrants, LTBI, hesitancy, adherence, non-adherence, and perception. The theoretical foundation, literature search strategy, and the review of the literature were discussed.

There is a need for more study and literature to describe perspectives of African immigrants living in the United States on LTBI treatment hesitancy; to better understand the underlying factors contributing to LTBI treatment hesitancy. Although many studies have been conducted on foreign-born United States citizens to determine the reasons for the high LTBI treatment hesitancy, no study has explored the perspectives of African immigrants living in the United States on LTBI treatment hesitancy.

The inability to identify or understand the perceptions of African immigrants on LTBI treatment hesitancy poses a challenge to improving LTBI treatment and prevention of active TB. This generic qualitative study focused on exploring the perspectives of

African immigrants in the United States on LTBI treatment hesitancy to address the gap in the existing literature.

Despite the prevalence of LTBI among African immigrants living in the United States, there is a lack of understanding about their perspectives and beliefs towards LTBI treatment, which may significantly contribute to treatment hesitancy and decrease health quality and outcomes. More research is needed to identify and address the contributory factors to LTBI treatment hesitancy and barriers to LTBI treatment acceptance or adherence among this population to encourage effective prevention of active tuberculosis and promote holistic wellness.

A gap in the literature and the lack of knowledge on the perceptions of African immigrants living in the US poses a risk of uneven distribution of LTBI treatment efforts and the prevention of active TB. It is essential to explore the perception of the group with high risk for LTBI to identify the underlying factors contributing to high treatment hesitancy, gain more knowledge on the reasons behind the low LTBI treatment adherence, fill the current gap in the literature gain insight strategies to encourage LTBI timely treatment, the prevention of active TB, and support the WHO efforts towards global TB eradication.

The following research questions guided this study:

Research Question 1 (RQ1): What are the perceptions of African immigrants living in the United States towards LTBI treatment hesitancy?

Research Question 2 (RQ2): What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

Search Strategy

I conducted literature search through thematic and chronological literature review on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. I used keywords to search for recent (within 5 years, from 2018 to 2023) peer-reviewed scholarly articles and journals. I searched for qualitative studies online through Public libraries and online Databases, Walden University Library, Google Scholar, ProQuest, PubMed database, EBSCO; PLOS, CINAHL Ultimate; National Institute of Health (NIH), National Library of Medicine (National Center for Biotechnology Information); New England Journal of Medicine (NEJM); SAGE Publishing; The Lancet Public Health; Tuberculosis Database (TBDB) Oxford Academic journal, and the National Heart, Lung, and Blood Institute (NHLB).

The search terms, phrases, and keyword (combined) include *latent tuberculosis*, *latent tuberculosis treatments*, *latent tuberculosis infection treatment hesitancy*, *LTBI treatment*, *hesitancy*, *LTBI treatment non-adherence*, *discontinued LTBI treatment*, *LTBI among US immigrants*, *LTBI among African immigrants living in the United States*, *beliefs*, and *behavior of individuals living with LTBI*. I also ensured that the discipline of the researchers that conducted the study of choice falls within the relevant discipline, including but not limited to public health, medicine, and nursing.

Articles and journals were selected based on the selection criteria within the current study parameter (recent articles within the last five years, peer-reviewed and relevant to the research topic). Only the studies that focused on the LTBI epidemiology, diagnosis, treatment, and the perspectives of African immigrants in the United States were included in the review. I applied both thematic and chronological literature reviews, to critique the past and most recent information (Not exceeding 5 years) on closely related studies to the Perception of African immigrants living in the United States Towards LTBI to introduce and establish a new point of view and justify the need for additional research.

This chapter critically evaluated relevant works for their scientific strength, evidence, premise, methodology, and conclusion. The review of relevant literature also critiqued their premise, methodology, omission, inconsistencies, bias, and other errors to justify their accuracy and relevance to the current study. The summary and critique of the selected peer-reviewed literature are included and referenced throughout this chapter.

Theoretical Framework

The central ideology is to use a method and theoretical foundation applied to research similar phenomena of interest. This section describes the theoretical framework's relevance, its application, and how it applies to this generic qualitative study. I used Anderson's healthcare utilization model and its three dynamics which include predisposing factors, enabling/disabling factors, and the need to predict healthcare service usage, to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. The Andersen healthcare utilization model is

a model that aims to predict the factors determining the uptake or use of healthcare services. The original model was developed by Ronald M. Andersen, a health services professor at the University of California Los Angeles (UCLA), in 1968 (Andersen, 1995). Qualitative research in health care services has become integral, and Andersen's behavioral model of health services is one of the most used models of health service utilization (Lederle et al., 2021). Studies show that Anderson healthcare utilization model has been used to determine the reasons for health services rejection and delay.

The purpose is to explore additional of views to the existing literature from a primary and subjective data source; therefore, I used a generic qualitative approach. A generic qualitative approach is suitable when a researcher wants to thoroughly explore a phenomenon of interest (Caelli et al., 2003). This generic qualitative study used Anderson healthcare model to develop interview questions needed to explore the perception of study participants. Since this study aims to explore the perspectives of the target population, I used an explorative design, and data were collected through semi structured interviews.

Anderson healthcare utilization model is related to the current study because it has been used in many different areas of public health research. This model outlines the key factors that influence or affect healthcare utilization, including predisposing factors, enabling factors and need factors. In this the three constructs of Anderson healthcare utilization model directly applies LTBI treatment hesitancy, and they were used to probe the possible reasons why African immigrants are not accepting the available services. In this study, the Anderson healthcare utilization model was used to examine that factors

that contributes to the hesitancy and non-adherence with LTBI treatment among African immigrants. This research examined the interplay between the three healthcare utilization factors to explore the potential determinants or underlying factors for LTBI hesitancy among African Immigrants.

Literature Review

Latent Tuberculosis Infection

LTBI is a condition where the bacteria that causes tuberculosis infects a person, but they do not have the active disease. According to Kota et al. (2023), LTBI is not immediately life-threatening, it can progress to active TB if left unaddressed. Diagnosing and treating LTBI is critical in reducing the global burden of TB. In the 19th century, there was an expansion in the study and practice of medicine, particularly in disease prevention; this led to the characteristic analysis of people dying with TB. The pathological changes of TB in damaged lungs of individuals with clinical manifestations of TB were described before they died by French and German physicians; this translates into the coining of the term “latent phthisis” TB (Behr et al., 2021). Although the term latent was traced back to 1894 when it is used occasionally, the definition of latent in the pre-TST is different from the post-TST era (Behr et al., 2021). The term latent means silent or existing but not yet developed.

LTBI is the silent version of TB; people with LTBI have TB bacteria in their bodies but may not show any clinical manifestation or symptoms and cannot spread the bacteria to others. However, individuals with active TB are sick with clinical manifestations/symptoms, usually in the upper respiratory and can transmit the bacteria to

uninfected people they contact (Parmer et al., 2022). Heidary et al. (2022) suggested that if LTBI remains untreated, it may become active with time or if the carrier's immune system is compromised.

Miramontes et al. (2015) found that more than 80% of TB cases in the United States result from longstanding, untreated latent TB infection. Active TB is a nationally notifiable disease that must be reported to local or state public health officials when diagnosed. However, latent TB infection is not reported; hence the CDC depends on the National Health and Nutrition Examination Survey for national estimates of TB, with a current estimate of 13.2 million cases across the United States (Haddad et al., 2020). In African immigrant communities, LTBI treatments remain a significant public health problem, leading to increased disease transmission and global health disparities.

The consequences of LTBI treatment hesitancy are far-reaching and complex; TB transmission can continue even in the latent state, increasing the possibility of spreading TB. Further, African immigrants in the United States will also suffer from a disproportionate burden of TB diseases with a higher incidence than other populations. Consequently, LTBI treatment hesitancy further perpetuates health disparities, with African immigrants living in the United States at high risk of contracting TB compared to other groups.

Epidemiology of LTBI in the United States

The CDC estimates that approximately 13 million people in the United States live with LTBI. This represents about 4% of the population. Although there has been a significant decline in the prevalence of LTBI, many reservoirs persist, with foreign-born

persons representing 73% of 13.2 million persons (Haddad et al., 2020). Notably, the prevalence of LTBI varies across population subgroups and it is distributed across the US. LTBI is higher among foreign born citizens, racial and ethnic groups. Naqvi et al. (2022) found that South Texas has a higher TB incidence than much of the US. Out of 9,050 interferon-gamma release assay (IGRA) tests in South Texas, 687 (8%) were positive; 340 (49%) were confirmed as LTBI (Naqvi et al., 2022).

TB may be challenging to treat, but it is curable, and Baggaley et al. (2021) show that the best curative measure for TB is preventive medicine, which includes diagnosing and treating LTBI. LTBI test is essential for everyone, but it is for people from countries where TB disease is common; people with health problems that make it hard to fight TB disease, for example, people living with HIV/AIDS who are immunodeficient; and people or healthcare workers who spend time in places where TB is more common. Apart from testing and treating LTBI, it is essential to encourage public health education to engage affected communities and medical providers.

The major impact of LTBI on health is that, without treatment, one in 10 people with LTBI will result in active TB disease. Studies show that without treatment, about 10% of infected persons will develop active TB at some point (Khabibullina et al., 2022). Further majority of these people will develop active TB within their first two years of getting infected. For example, Iqbal et al. (2021) found that approximately 80% of the 13,777 cases of TB disease verified and genotyped in the United States during 2015–2016 were attributed to reactivation of LTBI acquired 2 years or earlier.

LTBI carriers become active TB carriers when their immune system is weak, as found in HIV/AIDS patients (Luke et al., 2022). Notably, there is a higher risk of developing TB disease in persons with a compromised immune system when compared to people with strong immune systems. In addition to immune depletion, failure of some organ systems can trigger the activation of active TB from LTBI. For instance, Liu et al. (2022) found that the risk of LTBI becoming active TB in patients with Diabetes Mellitus (DM) is about 60% more compared with non-DM patients.

LTBI prevalence in persons born outside the United States varies widely by country; however, Collins et al. (2021) identified that Foreign-born persons accounted for 57 percent of all TB cases in the United States in 2006, and African immigrant rates for LTBI are significantly high among other foreign-born United States citizens. The relative yield of diagnosis and treating LTBI is exceptionally high among individuals from sub-Saharan Africa (Cain et al., 2008; Collins et al., 2021).

LTBI Diagnosis Resources

The U.S. government provides diagnostic and treatment resources for LTBI as part of the WHO's goal to eradicate TB. Diagnostic sources for LTBI are primarily managed by the CDC, state, and local health departments and are available across the United States. LTBI testing and treatment centers are available nationwide, including but not limited to hospitals and local and state public health departments. Also, preventive programs are available to the group at risk for LTBI, particularly foreign-born citizens. For example, the Texas Children's Mobile Clinic Program provides high-quality pediatric health care within the community setting (Swamy et al., 2022).

There is no direct test to isolate and identify live *Mycobacterium tuberculosis* infection in humans; instead, LTBI diagnosis is indirect and relies on detecting an immune response against the antigens of *Mycobacterium tuberculosis* (Zellweger et al., 2020). It is assumed that the immune response is developed after contact with the biological agent hence a positive antigen test indicates a positive LTBI (Zellweger et al., 2020). The Mantoux TST, also called a purified protein derivative test (PPD), and the IGRA (blood test) are currently used to establish the diagnosis of LTBI (Carranza et al., 2020).

The most common test for diagnosing LTBI in the United States is the TST. TST involves injecting a small amount of PPD into the patient's skin and measuring the diameter of the induration that develops after 48-72 hours (Hamada et al., 2023). The TST is considered positive if there is an induration of 10mm or more. The alternative to TST is the IGRA blood test which measures the level of interferon gamma produced by T or lymphocytes cells in response to TB antigens. Unlike TST, the patient provides blood samples which is tested for the presence of interferon-gamma and positive test is determined by a lab titer system.

Although there is no gold standard in diagnosing LTBI, studies show that the IGRA is often recommended because it provides more accurate results than the TST. However, Sagili et al. (2022) found that TST is widely used worldwide, particularly in developing countries, due to its ability to detect LTBI within 1-4 weeks of exposure, low cost, and straightforward implementation compared to IGRAs, which are more expensive to conduct. TST has limitation such as false negatives in some patients such as immune-

compromised patients and false positives in people who have received some vaccine that could elicit response to PPD or infected with non-mycobacterium tuberculosis bacteria. Although TST is reliable, it is recommended to be used as a presumptive test for a comprehensive TB diagnosis of individuals at risks. According to Hamada et al. (2023), the IGRA is more specific than the TST; however, it is expensive to conduct and requires a standard laboratory.

Challenges in Diagnosing LTBI Among African Immigrants Living in the United States

Hesitancy is one of the leading challenges in diagnosing LTBI among African immigrants in the United States, this occurs when susceptible individuals do not have sufficient symptoms or belief in a suspected disease (Agathis et al., 2021). Sharan et al. (2022) found that sometimes, inadequate information about the diagnostic procedure may make diagnostic procedures cumbersome or time-consuming, leading to hesitancy.

Khan et al. (2019) found that underestimation of the LTBI may pose challenges to diagnosis because it is a dormant or asymptomatic infection; since there needs to be more evidence to prove its associated risks, this can lead to an incorrect deduction, such as no health risks. For example, infants are often exempted from LTBI diagnosis because LTBI is not innate, as it is a condition that develops due to exposure to the mycobacterium tuberculosis (the bacteria that causes TB); studies show a high probability of babies contracting LTBI right after birth and mycobacterium tuberculosis can remain dormant in infants and may not elicit any symptoms (Miele et al., 2020).

Anxiety and stigma contribute to diagnosis hesitancy because of a lack of knowledge about the disease; for example, individuals may fear stigmatization from their families and communities if diagnosed with a particular disease (Phelan et al., 2023). Degeling et al. (2020) identified cultural beliefs, lack of information, and stigma to contribute to LTBI diagnosis and treatment hesitancy among immigrants from South Sudan.

Treatment of LTBI in the United States

According to Sharan et al. (2022), TB activation or reactivation rates can be significantly reduced if LTBI patients take preventative therapy/intervention. The standard treatment for LTBI in the United States is a course of isoniazid (INH) for 9 months. Isoniazid is a medicine that target and kills mycobacterium tuberculosis bacteria during the latent phase. However, there are alternative regimens that may be used for patients who are intolerant to INH or have drug-drug interactions. The alternatives to INH include 4 months of Rifampin, 3 months of weekly INH and Rifapentine. Sterling et al. (2020) suggested that LTBI treatments are tailored to each individual circumstance or on a case-by-case basis.

From research and evidence-based point of view, there are three preferred and two alternative LTBI treatment regimens: (1) Rifamycin-based regimens, including three months of once-weekly isoniazid plus rifapentine, (2) 4 months of daily rifampin, and (3) 3 months of daily isoniazid plus rifampin are the preferred recommended regimens because of their effectiveness, safety, and high treatment completion rates (Sterling et al., 2020). Regimens of 6 or 9 months of daily isoniazid are alternative recommended

regimens. These combinations are alternatives because they have lower toxicity risk and treatment completion rates, decreasing effectiveness (Huaman & Sterling, 2019; Sterling et al., 2020).

Effectiveness of Current LTBI Treatment Regimen

Studies revealed that all LTBI treatment regimens have been proven effective, and it is arguable that no single treatment regimen demonstrates superior effectiveness to any other (Cerrone et al., 2022). However, the United States' most recent comprehensive LTBI treatment guidelines published in 2000, the 9 months of daily self-administered isoniazid (INH) is considered the gold standard comparator regimen to evaluate shorter-course regimens. Further, it is essential to consider the pharmacological section criteria while selecting a medication to treat LTBI. For example, regimen selection should consider the risk of adverse events with special consideration of coexisting medical conditions, side effects, convenience, concomitant medications regimen, and the likelihood of treatment adherence and completion (Sterling et al., 2022).

Risks Associated with LTBI Treatment Regimen

LTBI medications are metabolized in the liver; hence, a prolonged intake of an isoniazid regimen poses a risk of hepatotoxicity. Lin et al. (2021) considered the 9-month daily isoniazid regimen too lengthy to complete. Patients with renal failure have recently been reported as at high risk for adverse drug events (ADE) of LTBI treatment even though isoniazid and rifamycin are metabolized in the liver (Lin et al., 2021). Notably, non-compliance with the LTBI treatment regimen or uncompleted treatment poses a risk of reactivation and development of active TB (Fehily et al., 2022). There are notable side

effects of LTBI medication that could be excessive in some individuals (Li et al., 2022). Notable side effects include but are not limited to urine discoloration, eye pigmentation, itching, drowsiness, lack of coordination, and headache.

Barriers to LTBI Treatment Among African Immigrants Living in the United States

The treatment of LTBI is crucial in the prevention and control of TB particularly in groups such as the African immigrants who are at higher risks for developing active TB. Manful et al. (2020) found that despite the availability of effective and safe LTBI treatments, hesitancy among African immigrants living in the United States remains a significant barrier to treatment uptake or completion.

Studies have identified various reasons for LTBI treatment hesitancy among immigrants in the United States these include but are not limited to lack of trust in the healthcare system, fear of medication side effects, cultural beliefs, language barriers, and associated stigma. Spence et al. (2023) identified that cultural beliefs had been identified to shape attitudes toward the disease's treatments and discouraged individuals from accepting medical interventions. Spence et al. found that in many African cultures, illnesses are often attributed to spiritual affliction, which may include the influence of witchcraft, sorcery, and other supernatural phenomena.

Franke et al. (2022) found that fear of stigmatization significantly contributes to TB diagnosis and treatment hesitancy. Franke et al. suggested that access and adherence to TB care can be increased if stigma is reduced. According to Omenka et al. (2020), mistrust in the healthcare system contributes to LTBI hesitancy among African immigrants in the United States. For example, African immigrants are likely influenced

by healthcare history involving human subjects to test a treatment. African immigrants may develop mistrust, fear, anger, and anxiety, making them less likely to seek LTBI treatment (Omenka et al., 2020).

Language barriers among African immigrants living in the United States may hinder understanding the importance of the need for LTBI treatment (Verma et al., 2022). Further, the challenge in accessing healthcare services and resources contributes to LTBI treatment hesitancy for example, African immigrants living in the United States may have limited information and resources to pay for diagnosis and treatment of LTBI; without access to these services, they may feel they are unable to get the treatment they need (Readhead et al., 2022). Agathis et al. (2021) identified the shortages in patient consultation for LTBI treatment. They emphasized the challenge of managing patients with suspected or confirmed LTBI, highlighting the need for more medical consultation support.

Spruijt et al. (2021) identified that lack of knowledge, anxiety, and stigma are the common factors impeding LTBI treatment. Naqvi et al. (2022) found that patient barriers to treatment completion included a need for knowledge, treatment toxicities with medication side effects, and misconceptions. Verma et al. (2022) found that African immigrant women in particular show concerns about possible harm to their pregnancy or breastfeeding during LTBI treatment; hence, they believe that treatment risks outweigh the benefit.

Szkwarko et al. (2022) found that the knowledge gaps among primary care team members and discomfort with LTBI treatment contribute significant barriers to LTBI

management in primary care. Campbell et al. (2022) found that factors impeding LTBI treatment include the adolescent's autonomy to accept or reject the treatment, lack of social support, and local clinics' being ill-equipped to provide LTBI treatment despite the patients' willingness.

Heyd et al. (2021) found that one central factor contributing to LTBI treatment hesitancy among immigrants is a lack of awareness and knowledge about active TB consequences; due to the limited knowledge, African immigrants do not see the value of LTBI treatment, hence are reluctant to initiate therapy. Spence et al. (2023) identified that most patients reported having limited knowledge of LTBI, particularly regarding the treatment duration, side effects, and the pervasive limited positive impact of treatment on their health. Holzman et al. (2022) found that with less than half of individuals diagnosed with LTBI, communication barriers, patient risk perception, clinical resource constraints, and accessibility challenges hindered their treatment and recommended further research to understand better and characterize the factors impeding LTBI diagnosis, treatment initiation, and treatment completion.

Mancuso et al. (2022) found that a lack of education on clinical implications, diagnostic testing, and attitudes toward preventative treatment significantly affect LTBI treatment. According to Parmer et al. (2022), many people believe that LTBI is the same as TB; this misconception often determines the rate of LTBI treatment acceptance and rejection. Some individuals, particularly health care workers, also believe LTBI treatment effects such as hepatotoxicity may permanently change or affect their body systems. For example, Rifampin has some notable side effects, such as reduction or loss of appetite for

a particular food, stomach cramps, yellowing skin or eyes, rash, tingling, or numbness in the feet and hands (Chung et al., 2020).

Prevalence of LTBI Treatment Hesitancy in the United States

There have been inconsistencies in the prevalence of LTBI treatment adherence and hesitancy in the United States. Rustage et al. (2021) found that 69% of migrants with a positive LTBI test initiated treatment, and 74% of those who initiated treatment completed it, which is considerably high. However, other findings suggest a high drop-out rate along the treatment pathway. For example, Stockbridge et al. (2018) found that fewer than half of the people starting treatment for LTBI completed therapy. Mancuso et al. (2021) found that 12.6 million out of 14 million did not complete LTBI treatment, 3.7 million (29%) had never been tested, and 7.2 million (57%) received testing but had no diagnosis history.

Treatment completion rates are also lower than desired among persons living with HIV, people with substance dependence, foreign-born, and the homeless (Runels et al., 2022). Bar-Meir et al. (2021) found that the LTBI treatment acceptance rate is significantly low among health care workers in the United States, with 16% of all HCWs diagnosed with LTBI between 2000 and 2015. Most recent studies show that the LTBI treatment initiation rate among immigrants in the United States is about 57%, and the completion rate is only 14%. Haas et al. (2021) also found a higher LTBI treatment acceptance rate among people between 50 years and older.

Also, recent studies identified that the COVID-19 pandemic contributed to LTBI treatment hesitancy; the pandemic has interrupted routine healthcare services and created

additional fears about accessing available health resources. In addition, Alene et al. (2020) found that public health messages have been focused on COVID-19, diverting the attention from other health issues including LTBI and using available resources to resolve COVID-19-related issues.

Critique of Previous Research on LTBI Treatment Hesitancy

This section expands on my literature review, determines whether the findings are applicable and how they contribute to the shaping effort to define the current research gap. Most research on LTBI treatment hesitancy are quantitative. This leads to many subsequent studies using secondary data sources. Further, there are many studies conducted on other immigrant groups, such as Asian and European immigrants residing in the United States. Some studies focused on acceptance and completion rate of LTBI treatments among African immigrants in the United States; and some researchers explored the influence of healthcare systems and policies on LTBI treatments acceptance in the United States. However, no study specifically explored the perspective of African immigrants living in the United States toward LTBI treatments. This literature review adequately supported the existence of literature gap on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy.

Summary

Although many studies have been conducted on LTBI treatment hesitancy, none has been conducted to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitance. This chapter provided a literature review to help gain insight into the current information on the perspectives of African immigrants

living in the United States on LTBI treatment hesitancy. This chapter summarizes the key findings of the literature review in general terms. This chapter strategically described, and my proposed research contributes to literature by filling current research gap, provides the most recent insights on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy, identified and recommend future research direction, and contribution to positive social change.

There is a need to explore and present the perspectives of African immigrants on LTBI treatment hesitancy. Although my study gained significant insights into the perspectives of African immigrants living in the United States on LTBI treatment hesitancy, however this study cannot be generalized for the target population. Hence there is a need to conduct more research to confirm the findings of this study.

Addressing LTBI treatment hesitancy among African immigrants living in the United States is essential in preventing and controlling active TB. Currently known factors contributing to LTBI treatments hesitancy include cultural beliefs, lack of knowledge, lack of trust in the healthcare system, misconceptions, and lack of medication side effects.

This section adequately described the transitional material to justifies the need and connect the gap in the literature to the current research. Chapter 3 describes the research design and methodology, the role of the researcher, and ethical issues in relation to trustworthiness.

Chapter 3: Research Method

Introduction

LTBI is a communicable disease in which an individual is infected with the bacteria causing TB (mycobacterium tuberculosis) but does not elicit any symptoms (Heyd et al., 2021). Schwartz et al. (2020) showed that about 13 million people living with LTBI in the United States are at risk of active TB. Hence, LTBI is a critical public health concern, particularly among African immigrants at higher risk for the disease. However, diagnostic and treatment resources are available to willing individuals at no cost across the United States. Despite the availability of preventive therapies, studies show that several African immigrants living in the United States are hesitant to seek or undergo LTBI treatment (Manful et al., 2020).

There are studies conducted to understand TB and LTBI, prevalence, diagnosis, and treatments; Although these studies were conducted on many immigrants living in the United States, the literature review of this study revealed that no study has been specifically conducted to explore the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy. This purpose of this generic qualitative study was to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. This generic qualitative study contributes to existing literature and recommend further studies to confirm the current findings and better understand the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy. This chapter discusses the research design and rationale, the researcher's role, methodology, and trustworthiness issues.

Research Questions

The following two research questions guided this research study.

RQ1: What are the perceptions of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

Research Design and Rationale

According to Busetto et al. (2020), choosing an appropriate method and design is crucial to a research study and supports the research framework; I used generic qualitative approach. A generic qualitative approach is an essential, traditional, or noncategorical qualitative inquiry. As mentioned in chapter two, the generic qualitative approach does not owe or declare allegiance to any qualitative approach; instead, it employs all qualitative approaches toward the phenomenon of interest or research topic (Cooper & Endacott, 2007). Using a generic qualitative approach gives a researcher an opportunity to freely explore the phenomenon of interest and allow the participants to freely express themselves without any restrictions. The generic qualitative approach gave me the ability to adequately explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy as desired.

Appropriateness of Generic Qualitative Design

The generic qualitative approach is ideal if a researcher aims to explore or inquire about participants' experiences and perceptions of a phenomenon of interest or a practical problem (Caelli et al., 2003). The generic qualitative approach may be constructive,

descriptive, or both (Kahlke, 2014). Many public health and social science researchers have successfully used the generic qualitative research approach. Kennedy (2016) found that the strengths of a generic qualitative approach arise when little is known about a phenomenon, but an in-depth understanding and description is the desired phenomenon. Kennedy (2016) also noted that the generic qualitative approach does not adhere to any qualitative approach and has no specific guidelines or rules. Thus, it always aligns with and benefits the purpose and aim of the study.

The generic qualitative approach is designed to answer straightforward questions in a natural setting without framing the inquiry within an explicit theoretical, philosophical, epistemological, or ontological tradition (Kahlke, 2014). The generic qualitative approach owes no allegiance to any philosophical or theoretical foundation, it is broad and flexible (Cooper & Endacott, 2007; Kahlke, 2014; Kennedy, 2016). The generic qualitative approach allows researchers to collectively use various approaches and methods applicable to explore phenomenon of interest or research question. The generic qualitative approach provided an adequate framework to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy.

Role of the Researcher

The role of a qualitative researcher can be divided into three: plan research, conduct research, and present research findings. The major role of a researcher is to moderate the whole research process by identifying a problem, defining the problem, establishing a research problem statement, collecting data, process data interpret and report findings. Sutton and Austin (2015) described a qualitative researcher's primary

roles as accessing study participants' thoughts, experiences, behaviors, beliefs, and feelings. These roles involve establishing research goals, identifying research questions, selecting appropriate data collection methods, and analyzing and drawing conclusions from the findings. The researcher's secondary role is to collect, organize, analyze, manage data, and present research findings (Sutton & Austin, 2015).

In qualitative research, the researcher is actively involved in the research process and often interacts with the participants to collect data to gain a deeper understanding of the phenomenon of interest. Throughout this research study I ensured maintained professionalism, morals, and etiquette. I also developed competencies to reduce bias, validated the findings to ensure their credibility. Lakin et al. (2022) highlighted the crucial role of research ethics in ensuring the proper management of the research process. This includes the selection of appropriate data sets, methodology, participants, time, and other valuable resources. By adhering to ethical standards, researchers can ensure the credibility and reliability of their research outcomes, which is essential for making meaningful contributions to their respective fields. Hence, the researcher must adhere to ethical practices by ensuring that study participants are protected and that findings are valid, reliable, and trusted.

Green and Johns (2019) found that a researcher in possession of research data and the participants, who own the opinion, experience, or knowledge needed to perform the study, can use their respective powers to influence the level of data provided about the research. To manage power relationships and foster a collaborative research process, I was mindful of power dynamics. I made a conscious effort to create a more equitable

research process, keeping participants fully informed of potential implications and research benefits and ensuring they could make informed decisions at any point during the research.

It is noteworthy that there is no relationship between the researcher and the participants for this study, so there is no power over the participants. To prevent bias, I used a transparent research process, including the methods and findings. Most importantly, I followed all ethical guidelines, and avoided all forms of harm and maintained confidentiality by protecting the identity of the participants.

Bottesini et al. (2022) identified that bias and allowing one's view in research is one of the biggest pitfalls, suggesting the researcher must maintain absolute control of personal opinions and views to prevent bias. Bispo (2022) suggested that researchers should mitigate bias by carefully considering the study design, selection of participants, methodology and be mindful of personal potential biases throughout the research process. It is the role of the researcher to conduct member checking or participant validation to ensure that the research approach is appropriate for the study (De Loyola González-Salgado et al., 2022).

The researcher's role in this research includes getting credible, reliable results and a quality research outcome. Member checking, also known as a participant or respondent validation, is a technique for exploring the credibility of results. I conducted member checking by giving participants access to the research interview transcript. I also set aside all assumptions, opinions, and beliefs that may have led to biased errors. To ensure my research the accuracy of my research questions, I collaborated with subject matter experts

to evaluate the research questions. This research was conducted in a thorough ethical research conduct and maintained professionalism as required. For example, I ensured that all participants are treated according to the ethical conduct required for the human subject in research, including consent and confidentiality.

Methodology

Participant Selection Logic

This study focuses on African immigrants living in the United States. The eligibility criteria for this study are those inclusion criteria mentioned in chapter one. As mentioned in chapter one, I recruited African immigrants living in the United States who meet the study participant inclusion criteria to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy. Study participants were African immigrants residing in the United States, have tested positive for a TST or other forms of LTBI diagnosis, 18 years and older, and were able to speak English.

Campbell et al. (2022) identified that size does not determine the quality of a sample. Purposive sampling is deliberately used in qualitative research to collect rich information when resources are scarce. For example, when limited participants are willing to participate in a research study (Campbell et al., 2022). I used purposive sampling to recruit and select desired study participants.

Andrade (2020) suggests that a qualitative research sample size needs to be estimated when the study is proposed. According to Andrade, too many samples will be unnecessary because of saturation, and too few will be unethical and unscientific because they will not demonstrate representativeness. Hence, the sample size in a qualitative

study typically depends on the research question, goal, method, and data analysis method (Hennink & Kaiser, 2022).

Unlike the quantitative research method, no rule defines a suitable sample size for a qualitative study (Andrea, 2020). However, researchers conducting qualitative research intend to achieve data saturation which means collecting data until no new information, insights, or themes emerge from the study participants (Hennink & Kaiser, 2022). Qualitative researchers usually recruit 10-20 study participants and continue data collection until saturation (Guest et al., 2020). Denny and Weckesser (2022) suggest that it is important to be aware of the representativeness of the target audience or population and the saturation point during data collection.

Participant size determination for qualitative study relies primarily on custom and finding the point where little or no new information is obtained (Weller & Vickers, 2018). Studies show that participants in qualitative research usually provide no new insight after 10-20 participants (Hennink & Kaiser, 2022). This study's sample size was determined when data saturation is achieved. This generic qualitative research recruited three participants for a pilot study to test feasibility and alignment of the interview questions with the research questions. The pilot group was comprised of random individuals who met the research participant selection and inclusion criteria. It is important to note that the information obtained from the pilot study confirms the method and research questions, they were not included in the final study.

The study participants were recruited through LinkedIn. The research flyer was advertised on both regular premium pages and the LinkedIn recruiting solution, with

clear due dates. Interested individuals who met the study's inclusion criteria responded to show their interest. Potential participants were carefully screened to ensure that they met the selection criteria. At the very least, their age, location, country of origin, ability to speak English, and willingness to participate were assessed. All participants received a participant invitation letter via email, a recruitment packet that included a participation form, and informed consent to ensure the participant's clear understanding and agreement to participate in the study.

Millions of people worldwide use LinkedIn, a professional social network. In recent years, it has become a significant source for recruiting research participants (Hosain & Liu, 2020). LinkedIn is an excellent platform for recruitment because it has a wide database of professionals from various industries and backgrounds. Goldberg et al. (2022) identified that using LinkedIn's search function, researchers can easily find and reach out to specific individuals who meet the study criteria based on their job description, education, location, and other factors. This targeted approach leads to a higher response rate and the ability to connect with people who may be difficult to contact otherwise.

Furthermore, LinkedIn offers a platform for researchers to connect with potential participants by facilitating communication through job descriptions and recruitment messages. Studies show that using LinkedIn reduces recruitment costs as it is a free platform, and participants can express their interest and raise queries about the study. Hosain and Liu (2020) suggested that time and money saved on recruitment can be used to improve the study design or increase the sample size, improving the validity of the

research. Darko et al. (2022), also identified that researchers have been able to recruit study participants for research studies via social media, including LinkedIn, in the last two decades.

According to Goldberg et al. (2022), social media provides a less expensive, time-consuming, and intensive alternative to traditional methods of recruiting study participants or patients from clinical settings. LinkedIn offers a great advantage of quickly and affordably reaching a vast and diverse range of individuals. This generic qualitative study used LinkedIn, with a clear instruction to the participants and compensated them for their time and effort accordingly.

The study participants met all inclusion criteria, specifically, from a demographic standpoint particularly for age and country of origin. Those who met the participant inclusion criteria participated and received a \$20 gift card as compensation.

It is worth noting that despite the benefits of using LinkedIn among many other social media also has some limitations that should be considered when using it to recruit research participants (Goldberg et al., 2022). For example, the platform is not often representative of the general population, particularly from a socioeconomic perspective as it is geared mainly towards professionals. Therefore, some of the potential participants may not be reached through LinkedIn. Additionally, LinkedIn's privacy settings mean that some users' profiles may be private, making them inaccessible for recruitment purposes. However, this study's screening process was extensive and ensured that only eligible candidates were selected to participate in the study.

Instrumentation and Data Collection

Qualitative research aims to understand the experience and the subjective meanings people attach to their experiences, belief, culture, and knowledge. Barroga and Matanguihan (2022) suggested that qualitative researchers should use structured open-ended questions through individual interview to explore subjects. The data for this generic qualitative research were collected through structured interviews. This study used a set of semi structured open-ended questions to guide the interview process and responses were audiotaped.

Semi structured interview questions help researchers gather information from key informants with personal experiences, perceptions, beliefs, and attitudes related to the phenomenon of interest (DeJonckheere & Vaughn, 2019). The purpose of using semi structured interview questions is to ensure question evenness, the same research relationship with all participants, and maintain a relationship and rigor. Notably, this study's semi structured interview questions were only relative and not absolute in their phrasing or wording.

Further, these questions were designed to facilitate the interview process, allow flexibility to the structure, and help maintain an excellent researcher-participant relationship. These semi structured interview questions were also piloted through a small group to test the feasibility and applicability alignment of the research questions to the research design and ensure they can support the final research question and goal.

Semi structured interview questions were multilevel and open-ended. This study's semi structured interview questions began with a broad topic, followed by probes

to elicit more detailed information from the participants. For example, in your opinion, what factors contribute to LTBI treatment hesitancy among African immigrants living in the United States; and how have cultural beliefs influenced your decisions around seeking or not seeking LTBI treatment? This generic qualitative research used nine open-ended semi structured interview questions outlined in Appendix C (Interview Guide).

Follow-up questions were generated to reinforce the initial interview questions; however, the prompts were determined by the response provided by the participant. Additional probes helped the participants to give a better or detailed explanation or clarification to their response, as shown in Appendix C.

Saturation is a form of redundancy, or a repetitive pattern presented in qualitative data. Saturation serves as a determining factor that determines the point of adequate significant data required to analyze a phenomenon. Tong and Tan (2022) defined data saturation as the point at which the data collected in a study or investigation has reached the peak or saturation point. Saturation means that data collection would not yield new insights or essential information; therefore, data collection stops when data yields no new information (Hennink & Kaiser, 2022; Tong & Tan, 2022). Leese et al. (2022) found that redundancy in research data is the main evidence of data saturation during data collection, hence, I looked out for redundancy in the participant responses. Although this research anticipate interviewing 10 to 12 participants, I stopped data collection from participants after data saturation was achieved.

Data were collected through semi structured, open-ended interview questions using telephone and videoconferencing calls. Participant responses audio-taped,

transcribed verbatim and coded for thematic analysis through Zoom, Microsoft Word audio transcription tool, and manual transcription. In addition to the priori codes, more codes were generated from the transcribed words to identify the common themes contributing to LTBI treatment hesitancy among African immigrants living in the United States. The responses were masked to protect participant identity and audio tape are stored for references.

Pilot Study

A pilot study is a small study to test the research approach, design, protocols, participant recruitment strategies, data collection instruments, data analysis, and management in preparation for a more extensive study or trial (Baldeh et al., 2020; Hassan et al., 2006). Conducting a pilot study is critical to qualitative research design as it helps to test the feasibility of the research approach, identify any potential issues before conducting the main study, forecast the sample size needed in the final study and make necessary adjustment (Mellor et al., 2022). Pilot study participants should reflect the type of participants the researcher intends to recruit for the main study. For example, pilot study participants should have the same inclusion or participant selection criteria. Therefore, I use the same inclusion criteria used in the final study.

It is essential to note some rules guiding research pilot study, which include not relying on the pilot sample size to determine the actual study size; Teresi et al. (2022) suggested that pilot studies should not be used to determine or conclude effect sizes or perform exploratory analyses of efficacy; instead, it should only be used to forecast and predict. Although the participants in the pilot study may be part of the final study if the

pilot study validates the proposed research questions, approach, and method; however, they were excluded from the final research study to adequately prevent bias and were only used to validate the research question, approach, or method.

I recruited the two pilot participants by using the same participant selection criteria, which include African immigrants currently living in the United States, 18 years and older, able to speak English language, have tested positive for TST or other forms of LTBI diagnosis and have access to Zoom conference calling.

I recruited the pilot study participants from LinkedIn; doing so provides an opportunity to validate my participant selection process and instrument. Interested participants went through screening to ensure they met the study inclusion criteria.

After selecting the participants, I sent another email to include the recruitment flyer, interview guide which included an informed consent form, the interview protocol form, and outline of the interview process. Each interview consisted of nine open-ended questions and did not exceed 35 minutes. Although this interview process to include schedule and member check was planned to be completed in a 5-day window, it was completed at the convenience of the participants. Notably, the participants had the right to exit the research process if they do not feel comfortable with the interview at any point. However, the interview process is planned to be practical and manageable.

The pilot study aimed to forecast and determine the feasibility, applicability, and alignment of the research questions to the research design and ensure they can support the final research question and goal. While collecting the pilot data, I focused on identifying problems or issues that may arise in the main study. After completing the pilot study, I

analyzed the pilot data and looked for patterns and themes that emerged. This process helped in determining the data collection, management, and interpretation issues. The pilot process answered the following four questions.

1. Does the process align with the research question and goal?
2. How can the research question be improved?
3. Is there a need to add or remove any questions?
4. Is the research approach realistic and workable?

The pilot study was an opportunity to practice transcription, coding, and thematic analysis. I developed priori codes before examining the data through the three dynamics of the Anderson healthcare utilization model; I started the coding process by highlighting the transcribed words and conducted thematic analysis by categorizing them into themes and subthemes to identify the common themes. Based on the pilot study findings, the feasibility of the research approach and all potential issues for the final study were identified. Lastly, I refined the research design based on the pilot study's insights. There was no need to contact the IRB because there is no need to make any adjustment to the research question or process to ensure the research is conducted within the IRB research ethical standard.

The qualitative semi structured interview questions were developed from an exhaustive review of the literature and the three dynamics of the Anderson healthcare utilization model, which include predisposing factors, enabling/disabling factors, and the need to predict healthcare service usage. Data were collected through open-ended

interview via videoconferencing. Interview duration did not exceed 35 minutes and responses were audiotaped during the interview.

Data Organization Technique

According to Dhakal (2022), organizing and managing qualitative data can produce meaningful findings, even though these data can be multifaceted and challenging to organize. A researcher needs to organize and manage research data. Data management includes arranging, masking participant information, protecting, analyzing, interpreting, validating, and storing data.

I used Microsoft Word document to organize and protect the research data. Microsoft Word document provided an ideal medium to organize research data into groups and sets. Research data was stored in a double-locked protected environment. All data collected for this research were analyzed in a password-protected computer. Data were also stored in a password-protected thumb drive (solid-state drive). This research data management includes the following.

1. Data organization pattern that include a tool that hosted all data, files, notes, and any supporting documents.
2. Codified participants' identity for masking purpose.
3. Consistent note taking and naming system.
4. Codes to describe how themes and files are tagged.
5. Log to store key insights, references, annotated bibliographies, contacts of key supervisors, activities, and any other vital information.
6. Data retrieval system in place in case of a system crash.

Data Analysis

Data analysis in qualitative study refers to systematizing, transcribing, describing, and interpreting the data collected through observation, interviews, and surveys (Pyo et al., 2023). According to Coates et al. (2021), Researchers use thematic analysis to analyze qualitative studies to gain insights into the intricacies of human behavior to answer the question of “how” and “why.” Qualitative researchers use the following thematic analysis steps to achieve common themes when answering research questions: what, why, and how?

1. Transcription and familiarization: Converting the participant responses into readable data and reading through each transcript several times to gain full understanding of every word. It is also a step to correct any spelling or other errors; anonymize or mask the transcript and insert notations for non-verbal cues and necessary punctuations.
2. Generate initial codes: This is done to organize and label data items into meaningful groups. This includes priori codes and establishing significant statements that relates to research questions.
3. Search for themes: This is to sort for initial themes and identify meaning and relationship between themes and initial codes. This was arched by diagramming and mapping with their defining properties.
4. Review of themes: This is to identify coherent patterns and review of the entre data. This helped to ensure there is enough data to support a theme, rework and refine codes and themes.

5. Definition and naming themes: This includes formulating exactly what each theme means.
6. Produce/ write-up the report: Findings were reported in written in a detailed description of the phenomenon of interest, and provided the story told by the data.
7. Validation: the report was shared with the participants to verify results with their responses to the interview questions. This provided a medium for member checking and participant validation.

To conduct my data analysis, I followed these seven steps. I collected data by asking semi structured, open-ended questions during Zoom videoconferencing. I immediately transcribed participants' responses word-for-word and analyzed them for themes using Zoom auto-transcription tool, and manual transcription. I used both inductive and deductive code generation to create codes. Prior codes were generated from the literature review, theoretical framework and prior study.

In research data analysis, there are two coding techniques: inductive coding and deductive coding. Inductive coding involves reading and interpreting primary textual data to develop themes or a process model based on the interpretations produced from the data (Chandra & Shang, 2019, p.91; Moilanen et al., 2022). Deductive coding, on the other hand, involves assigning a predefined set of codes, which may be from previous research or background knowledge to new qualitative data (Renjith et al., 2021).

To identify common themes, I used an inductive coding process to generate code directly from the transcribed participants' responses. Additionally, I generated codes

through a deductive orientation from the study's literature review. The literature review highlights that despite the availability of treatment therapies for LTBI, many African immigrants residing in the United States are hesitant to accept or complete LTBI treatment. The Anderson healthcare utilization model was also used, which encompasses three dynamics: predisposing factors, enabling/disabling factors, and the need to predict healthcare service usage. Predisposing factors include characteristics such as race, age, and health beliefs. Enabling factors include family support, access to health insurance, and one's community. The need factors represent the perceived and actual need for healthcare services, as identified by Pengid et al. (2022).

Priori codes were developed from literature review, study theoretical model and were used to attach labels to the participant response and will provide a means to categorize and organize the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. Codes were also used to identify the common themes and contributing factors to LTBI treatment hesitancy. Interviews responses were transcribed into text and coded in labels for recognition and storage of data. Participant responses were transcribed verbatim and manually analyzed for themes through codebook thematic analysis.

Issues of Trustworthiness

Trustworthiness refers to the degree of a study's confidence in the findings or outcome of the study. Trustworthiness is a measure of validity through the research's credibility, transferability, dependability, and confirmability (Nyirenda et al., 2020). According to Nyirenda et al. (2020), ensuring good research rigor promotes good

relationships, trust among network participants, which enhance the quality of qualitative research findings. To achieve trustworthiness, there is a need to ensure the validity of the research process and the findings.

This study's target audience is diverse; hence it is essential to ensure rigor through triangulation and member checking. Johnson et al. (2020) described triangulation as the use of multiple sources or methods to collect and verify research data to increase the confidence and reliability of the study. This study ensured that participants are from different Sub-Saharan African countries for a good representation of the population under study.

Credibility

The credibility of research refers to the degree to which the research accurately reflects the views and experiences of the research participants. According to Hayashi et al. (2021), there are many approaches to establishing research credibility; however, there is a growing consensus on adopting a set of rigorous quality criteria, which include triangulation and member checking. The credibility of this study was achieved through triangulation of the data sources, member checking, and supervisor debriefing.

Transferability

Transferability refers to the applicability of research findings to a similar population, context, or phenomenon. Transferability is also used interchangeably with generalizability and external validity, which refers to the evidence the research study provides to the readers that the research finding applies to other populations, situations, and time (Rose & Johnson, 2020). The researcher is responsible for providing a complete

description of the entire research process. To ensure transferability, I used purposive sampling to select the study participants, and ensured that interview questions were clear enough for participants understanding. This study also includes a detailed description of the research approach and data collection and analysis method.

Dependability

Dependability in qualitative studies is the reliability and consistency of research findings. Korstjens and Moser (2018) suggested that the dependability of a study can be strengthened through audit trails and triangulation of data sources. According to Jonson et al. (2020), dependability also means that other researchers should be able to use the same research method and achieve similar results. Although dependability can be achieved through various strategies, I used triangulation, member checking and audit trail to ensure dependability. I ensured that the process was logical, traceable, and well documented.

Confirmability

According to Elo et al. (2015), conformity is the degree to which the research findings are objective and not simply a product of the researcher's bias or subjectivity. Some strategies to ensure confirmability include transparency and multiple sources of data. One of the key factors that ensure the validity of a study is confirmability. This means that the study's findings are primarily shaped by the participants' perspectives, rather than being influenced by the researcher's personal biases or interests (Sutton & Auatin, 2015). This study achieved confirmability by ensuring full awareness of self-foundational knowledge to prevent bias and using supervisor and peer review to ensure the finding is free from bias.

Ethical Procedures

Application for the Institutional Review Board (IRB)

According to White et al. (2020), the institutional review board (IRB) is an essential body, constituted under the Office of Human Research Protection, with a federally mandated responsibility of reviewing any research involving human subjects to ensure that a proposed protocol meets the ethical guidelines before study participants may be enrolled in any study. The IRB primary purpose is to ensure the safety, rights and welfare of research participants are protected.

IRB safeguards the research process by reviewing research proposals to ensure the study meets specific ethical and regulatory proposal to ensure that the study meets specific ethical regulatory standards (White et al., 2020). The IRB evaluates whether a proposed study poses minimal risks to participants and ensure all potential risks and addressed. The IRB assesses the study research method and procedures to ensure they are appropriate and that the study participants are adequately informed about the research and their role.

The IRB also monitors ongoing studies to ensure that they remain compliant with the ethical regulatory standards and any adverse events are addressed promptly. The IRB has the authority to approve, require modifications to or disprove research proposals to ensure human subjects are treated appropriately before, during and after the research study. The IRB is responsible for ensuring that all Walden University research complies with the university's ethical standards as well as U.S. federal regulations. I applied for the

Walden University IRB approval and upon the approval of my proposal, I started my participants recruitment process and proceeded by data collection and analysis.

Ethical Considerations

According to Nagai et al. (2022), ethical considerations are essential in qualitative research, particularly those involving human subjects; this ensures that the study participants' rights, protection, and welfare are well established and enforced. Some of the data collected by a qualitative researcher may include sensitive and personal information from the participants. Hence, respecting and protecting their privacy, confidentiality, and autonomy is essential.

Further ethical considerations help researchers avoid exploiting marginalized or vulnerable research participants and ensure that the research process does not cause any harm. Ethical principles help researchers to maintain the research's credibility, integrity, and benefit both the researcher and the participants. It is the responsibility of the researcher to adhere to research ethics and standards throughout the research and after to ensure respect for participants and maintain integrity and transparency.

The Walden University, IRB approval include a thorough review and critique of the ethics committees to ensure my research proposal meets ethical standards. This research followed the ethical research standards outlined in the Belmont Report of 1979, which are the basic principles among those generally accepted in the cultural tradition of research involving human subject ethics. These include (a) respect for persons, (b) beneficence, and (c) justice.

According to Kraft et al. (2020), respect for persons emphasizes treating individuals with respect, autonomy, and dignity. This ethical principle holds that all individuals have an inherent value and should be treated as such (Kraft et al., 2020). Respect for people includes giving research participants the right to make their own decision regardless of the ramification of the research process. Research participants also have the right to express themselves and are entitled to contest any treatment they perceive to be unfair.

Bitter et al. (2020) defined beneficence as an ethical principle that requires individuals to act the ways that promote the well-being of others, and this means doing no harm to research participants at all costs. This includes providing care that benefits the participants or incentive to compensate for their time and effort invested in the research. For example, I compensated the participants with a \$20 gift card at the end of the interview.

Justice is the concept of fairness and equity in treating all persons, including fair distribution of burdens and incentives. Justice also refers to the equitable treatment of research participants without discrimination regarding age, gender, social status, or religion. Justice is the most fundamental principle of ethics and is central to protecting human rights (Bitter et al., 2020).

This research ensured that participants are adequately informed, and well respected. Participants privacy was safeguarded by masking their identity and protecting their personal identifiable information. This research ensured transparency and honesty about the findings and the conflicts of interest and did not allow any form of

discrimination. I paid close attention to the participants to ensure they were not emotionally distressed or psychologically harmed. This study ensured that all ethical principles are applied in accordance with the Walden University IRB.

Participant Masking

Participant masking is used in qualitative research to protect the identity of the participants by masking their names, occupation and any other personal identifying information that may compromise their anonymity (Panos & Lester, 2021). Masking provides an ideal medium for participants to freely express themselves, which makes them feel comfortable and honest to share their opinion.

Another reason for masking participants is to prevent any potential harm that may result from the disclosure of sensitive or personal information (Keerie et al., 2018; Rodriguez et al., 2022). Masking protects the participants from potential retribution or backlash from their third parties who may have interest in the study's findings (Panos & Lester, 2021). Above all, masking the participants helped the research process to maintain impartiality and objectivity in the data analysis, which also increased the accuracy and reliability of the research data.

Omenka et al. (2021) found that some African immigrants believe that giving out their personal or medical information may affect their immigration status, therefore, LTBI is considered a sensitive topic, and keeping this qualitative data confidential is essential. Although demographic information, which includes gender, age, education level, country of birth, and previous positive test were collected as part of data collection,

this generic qualitative study masked the participants for any personal information that can be used to identify them and were identified by specially generated codes.

Data Treatment and Handling

Data were collected through individual interviews. The participants' responses to the interview were audiotaped and stored in password protected computer. To manage my emergencies, I stored my data in my password coded Zoom cloud, which is accessible should in case my computer crashes. Data were used solely for the research purpose, was not disseminated to other researchers, and will be stored for five years after which it will be destroyed. Any physical print of the data will be destroyed by fire and the digital copies will be permanently deleted.

Summary

The qualities of a good research study can be determined by the effort invested in methodological details and depth. This chapter provided detailed information on the proposed research methodology, including the research question, research approach, my role as a researcher design, instrumentation, participant selection criteria, pilot study, data collection techniques, data management, trustworthiness issues, and ethical considerations.

This generic qualitative study began upon Walden University IRB approval and ensured all research processes took place under strict ethical guidelines, which include respect for persons, beneficence, and justice. This study was piloted using the same study participant selection, inclusion criteria and process of interview as it is in the final study. Data was collected through semi structured interview questions, developed from the

dynamics of the Anderson healthcare utilization model and the findings from the literature review.

Participants were masked to protect their identity, responses were transcribed and coded for thematic analysis and their initial responses were saved for reference. This study was piloted to ensure the feasibility and applicability of the proposed mythology and instrumentation. Although the response of the pilot participants provided insight into the perspectives of African immigrants on LTBI treatment hesitancy, they were not included in the final study. The number of anticipated participants ranged between seven and eight, study participant size was determined through saturation of data, with the total of eight participants. This chapter concludes the research methodology. Chapter 4 expands on data collection process, analysis and describes the results of the data analysis through coding and thematic analysis and evidence of trustworthiness.

Chapter 4: Results

Introduction

Studies show that TB is the deadliest infectious disease in the world, despite the efforts of the WHO, there is no reduction in the prevalence of TB globally. Further, studies show that there is a high hesitancy rate to the LTBI treatment, and the rate of active TB continues to increase. Although researchers have investigated LTBI treatment adherence and hesitancy in many foreign-born United States citizens, no research has been conducted to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy (Arakelyan et al., 2021; Manful et al., 2020; Petersen et al., 2022). The purpose of this generic qualitative study is to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy to understand how their perspectives impedes LTBI treatment efforts and the target to eliminate TB.

This generic qualitative study explored the perspectives of African Immigrants living in the United States on LTBI treatment hesitancy. Data were collected from eight individual semi structured interviews conducted via Zoom teleconference calls which provided a set of robust individualized responses to the interview questions. The responses were used as the framework for assessing and exploring individual perspectives on LTBI treatment hesitancy.

Two questions guided this research to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. These two research questions focused on hesitancy and nonadherence.

RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

This chapter describes the pilot study, research setting, participant demographic information, data collection method and analysis. In addition, this chapter discusses trustworthiness, credibility, transferability, dependability, and confirmability with a chapter summary.

Pilot Study

The purpose of this quantitative research pilot study was to test and refine the proposed research methods and procedures before conducting the actual study (Aschbrenner et al., 2022). The pilot study aims to identify any potential issues or challenges that may arise during data collection, analysis, or interpretation. Further, the pilot study uses a small-scale version of the study with a sample selected from the target population and provides the opportunity to evaluate the feasibility of the proposed research design and make necessary adjustments.

This research pilot study was conducted through a friend and a co-worker who met the selection and inclusion criteria. Although this was a direct invitation, all research protocols were applied. For example, the pilot study applied the same recruitment method to be used for the final study. I posted the research recruitment flyer on LinkedIn and sent a research invitation (Appendix A and B), through email to the potential pilot participants, who responded with their interest to participate in the study.

The pilot participants were selected through the same selection process to be used in the final study. Invitation emails were sent out to three known participants, to which two people responded. I screened the two pilot participants through the screening questions in Appendix B to ensure they meet the research inclusion criteria. At the end of the participant screening process, two pilot participants were selected. The two pilot participants received the interview guide (Appendix C) and consent form, and they responded with their consent to participate in the research study. Notably, interested participants who do not reside in the United States or have tested positive to LTBI test will not be selected in the final study. Research interviews were scheduled through Zoom video conferencing at different times based on their location and availability.

The pilot participants included a 35-year-old, female Liberian, and a 51-year-old male Kenyan both of whom have at least a bachelor's degree (Table 1). The participants were masked and interviewed, using the semi structured interview questions prepared for the final study (Appendix C). The participants provided robust responses to the interview questions. The participants responded freely, providing their perspectives to LTBI treatment hesitancy among African immigrants living in the United States.

The interview responses of the two pilot participants were transcribed through Zoom auto transcription service and were manually coded for themes through codebook thematic analysis. Some of the initial codes used to analyze the pilot study were derived from the literature review (Franke et al. 2022; Omenka et al., 2020; Spence et al., 2023). Data were obtained from both verbal and non-verbal responses, which provides rich

information to describe the perception of African immigrants residing in the United States on LTBI treatment hesitancy.

Table 1 provides the demographic characteristics of the participants. The pilot study validates the alignment of research question and the proposed method, therefore there is no need to adjust or refine the approved research plan. The outcome of pilot study validates the alignment and soundness of the research design.

The pilot study results were validated by the clear objectives and goals of the proposed plan; for example, the pilot study objectives included the recruitment of study participants from LinkedIn, interviewing them through Zoom video conference, and use of semi structured interview questions to explore their perception on LTBI treatment hesitancy. These objectives serve as the key indicators and metrics for evaluating the pilot study results. The pilot study results were compared against the objectives and metrics from the proposed plan.

Table 1

Pilot Study Participant Demographics

Code name	Age (yrs.)	Gender	State of residence	Country of origin	Education	Occupation	Number of years lived in the US (yrs.)
P-001	35	F	MD	Liberia	Masters	Military	8
P-002	51	M	TX	Kenya	Bachelors	IT Specialist	15

Initial codes generated from literature review and the study theoretical framework were used to code the pilot data. I searched for themes, reviewed the themes, and matched them with the initial codes. Themes were labeled and organized by their

relationship with the initial codes. The responses provided valuable themes that aligns with the research questions and adequately describes the perspectives of African immigrants on LTBI treatment hesitancy. Notable themes from the pilot study include (1) Lack of trust in the United States health system (2) Fear of LTBI medication side effects and (3) There is no need to receive LTBI treatment. The pilot study provides a set of information that aligns with research questions and theoretical framework, so I included them in the priori codes (Table 5) of the final study. Since there is no need to adjust any of my research questions, or method there is no need to contact Walden University IRB to make changes.

Research Setting

Recruitment for this study occurred between August and October 2023 via LinkedIn and WhatsApp group chats. I posted the research flyer on LinkedIn, and I asked interested participants to share it on their respective group chats. The participant inclusion and selection criteria include potential participants who are 18 years of age, speaks English language, have tested positive for LTBI, and resides in the United States. After posting the research flyer, I received indication of interest via LinkedIn message from twelve interested participants.

I screened the interested participants to ensure they all meet my participant inclusion criteria, and only two interested participants did not meet all the participant inclusion criteria. For example, one of the interested participants is only visiting the United States and the second participant has never tested positive for LTBI. After selecting the participants that met all inclusion criteria, I sent invitation emails with the

interview guide and consent form (Appendix B and C) for them to read and understand. Out of the 10 invitation emails sent, nine prospective participants responded with “I consent.” One interested participant did not consent to the research terms.

After receiving their consent to participate in the research study, I sent out the available interview date/time, with special consideration to different time zones, and asked them to reply to me with their preferred time at their convenience. Interviews were scheduled on Zoom video conferencing calls at the convenience of the participants respectively. The interview was conducted using the semi structured interview questions constructed through the study theoretical framework. The interview took place in a controlled environment (behind closed doors) to mitigate noise or any interruption.

Participants were masked for confidentiality purpose; hence they were given code names that are only known to the researcher and the participant. I applied security protocols to ensure the identity of the participants and the data provided are safe. For example, the interview invitation was pass-word encrypted, through Zoom videoconference, and participants were assigned code names for access to the interview. In addition to the masking protocol, there was no video recording, however, participants responses were audiotaped using Zoom audiotape, and transcribed with the original responses. The responses were auto transcribed through zoom, and manually proofread and corrected for spelling accuracies.

After transcription the interview transcripts were sent to the participants for members checking via email, to ensure the transcription is accurate. The participants replied to the emails and validated their transcripts. The transcripts did not contradict the

intent of the participants. Apart from minor spelling errors due to some pronunciation, there was no need for any major correction or adjustment to the transcripts. A total of six participants returned their transcripts with no corrections, while two participants (A-002 and S-006) returned their transcripts with a few corrections due to spelling errors. Data were saved in a protected and password-coded computer, with no online access.

Interview transcripts will be saved for the next 5 years in accordance with Walden University research protocol.

Demographics

The participants' demographics included age, gender, country of origin, current state of residence and education level (Table 2). I interviewed eight people for this generic qualitative study. Inclusion criteria included age (at least 18-years old), ability to speak English language, have tested positive for LTBI, and currently reside in the United States. All participants are from West Africa, four Nigerian (50%) one Serra Leone (12.5%), One Liberian (12.5%) and two Ghanian (25%), five females (62.5%) and three males (37.5%). Six participants have master's degree (62.5%) and two have bachelor's degree (25%; Table 2). Pseudonyms were assigned with random alphabets with the number code in order in which they were interviewed.

Table 2*Study Participant Demographics*

Code name	Age (yrs.)	Gender	State of residence	Country of origin	Education	Occupation	Number of years lived in the US (yrs.)
Z-001	37	F	SC	Nigeria	Masters	Teacher	8
A-002	52	F	VA	Ghana	Bachelors	Nurse	15
K-003	38	M	MD	Nigeria	Masters	Nurse	20
F-004	54	F	MD	Serra L.	Masters	-	30
N-005	35	M	DC	Nigeria	Masters	Lab tech	20
S-006	31	F	MD	Ghana	Masters	-	22
R-007	35	M	TX	Liberia	Masters	Pharmacists	18
M-008	47	F	MD	Nigeria	Bachelor	Nurse	13

It is worth noting that the study participants are from West African countries and most of them have master's degree. Also, the number of years they have lived in the United States ranges from low eight and high 30 years. Further, all the participants in this study are from the east coast and central part of the United States. For example, four participants are from Maryland, one from Virginia and one from District of Columbia (DC). All participants are educated with six master's degrees and two bachelor's degrees. Five of the participants work in the healthcare field. Finally, the participants' ages are notably on average 40 years.

Data Collection

Generic qualitative research design allows a researcher to use the combination of all qualitative methods to gain freedom of maneuver in inquiring about a phenomenon of interest and answering a research question. Using a generic qualitative design allowed me to freely explore the phenomenon of interest without an allegiance to a specific qualitative research approach. This research used individual interviews and open-ended

semi structured questions to explore the perspectives of African immigrants, living in the United States on LTBI treatment hesitancy. Individual interviews provided the participants the opportunity to freely express their perspectives, beliefs, feelings, and thoughts about LTBI treatment hesitancy.

The recruitment and data collection began after receiving the Walden University IRB approval with approval number 08-02-23-0294059, with an expiration date of August 1, 2024. Interviews were started on August 25th and concluded by October 30th, 2023, when no new themes emerged, indicating data saturation had been reached. Upon the receipt of participant consent, Interview date and time was scheduled at their convenience respectively of the participants with special consideration of time zone.

It is worth noting that the inclusion criteria screening had been completed, and the participant's consent had been obtained before setting the interview schedules. A password-protected link was sent to the participant and the interview was conducted on Zoom. As stated in the interview guide and consent form, specific rules were reiterated for the interview process, such as participants were not allowed to reveal their names, workplace, or promote any product or service to ensure confidentiality.

Before the recording session, I reviewed the rules with the participants to ensure the participant's readiness. The recorded session began after reviewing the interview rules. Before asking the interview questions, the participants were asked to provide answers to six demographics questions, which include age, gender, current state of residence, country of birth/origin, education level and number of years of residence in the

United States. These demographic data were used to further verify their eligibility to participate in the research.

All participants were asked the same set of semi structured questions (Appendix C). These nine questions were framed from the research theoretical framework and the two main research questions. The questions are structured in an open-ended manner to accommodate the participants to provide more detailed and valuable responses and allow them to use their own language to explain their perspectives, beliefs, and feelings. Although some of the participants changed their scheduled time, I was able to collect all data between August and October 2023, via Zoom, and I interviewed eight participants in addition to the two pilot study participants.

Duration of Data Collection

To explore the perspectives of African immigrants residing in the United States I interviewed eight participants who met all participant inclusion criteria and consent to participate in the research study. I received my Walden University IRB approval on 02 August 2023 with approval number 08-02-23-0294059 and started advertising on LinkedIn on 03 August 2023. I spent an average of 30 minutes communicating with each potential participant and exchanged several emails for proper screening and scheduling of the interview.

Ten participants were recruited, nine consented to participate and only eight were interviewed due to saturation. Data collection took place between 25th August and 30th October 2023, via Zoom videoconference. Through the semi structured interview questions, participants were asked to provide their perspective on LTBI treatment

hesitancy and explain the reason why they believe or feel the way they feel. Participants were probed as needed to obtain clarification or additional information.

Interview duration ranged from 20 minutes to 30 minutes, ensuring that no interview exceeded 60 minutes as promised in the informed consent (Table 3). However, it is noteworthy that some interviews were conducted twice because two participants accidentally mentioned their names during the audio recording.

The participants that accidentally mentioned their names are F-004 and R-007. Both participants mentioned their names at the initial stage of the interview and the interview was quickly stopped, and the interview was restarted. Hence, there is no potential skewing of the results.

Table 3

Duration of Interviews

Interview number	Duration
Z-001	27:43
A-002	22:24
K-003	29:10
F-004	22:48
N-005	23:35
S-006	17:21
R-007	20:46
M-008	25:40

Data Analysis

Data analysis in generic qualitative research study solely relies on thematic analysis (Bellamy et al., 2016; Kennedy, 2016; Percy et al., 2015). Thematic analysis is a valuable method employed for analyzing qualitative data. It entails scrutinizing a dataset and discerning patterns in the significance to reveal themes. Thematic analysis is

dynamic and introspective, with the researcher's personal encounter being pivotal in comprehending the information (Braun & Clarke, 2023; Saunders et al., 2023). For this research, I employed both inductive and deductive coding approaches. Deductive coding involves using pre-existing codes that are developed before collecting or interacting with the current data. This typically involves creating a set of codes based on a literature review, theoretical framework, proposed research questions, and pilot study (Bingham, 2023). Inductive codes are generated during data collection or analysis.

I collected data from the participants through semi structured, open-ended interview questions, listed in the interview guide. These questions were generated from literature review, theoretical framework, the pilot study and screened to ensure alignment with the main research questions and prevent researcher's bias and assumptions. Participants were advised to use their own words and freely describe their perspectives. Although participants have been informed about their roles in the research, I reminded each participant about member checking. After data collection and data analysis.

After collecting data from each participant, I transcribed their responses from the audio recordings and sent the transcripts back to them for member checking. Six participants returned their transcripts with no corrections, while two returned them with only a few corrections.

Next, I started coding the data based on the priori codes that I had developed from the literature review (Table 5), the three dynamics of the Anderson healthcare utilization model, and the pilot study. I began the coding process by reading the transcript repeatedly and highlighting the key words in the participant responses. Then, I manually conducted

my thematic analysis by categorizing the highlighted words and developed them into themes.

Through confidentiality and freedom of expression, the open-ended semi structured interview questions helped generate a set of genuine and robust responses from the participants to describe their perspectives on LTBI treatment hesitancy among African immigrants living in the United States. Prior codes helped generate codes that eventually became the foundation for generating themes and subthemes. I conducted a concurrent thematic analysis which helped in identifying saturation through repeated themes (Table 4).

The research theoretical framework and the research questions, and the priori codes helped in understanding the perceptions, beliefs, and thoughts of African immigrants living in the United States on LTBI treatment hesitancy. In addition, the use of open-ended semi structured interview questions supported this study in determining the transferability of the phenomenon.

Participants confidence was established through confidentiality assurance. For example, all participants were assigned a code name and were encouraged to speak freely in their own term. In addition to the assigned code names to the participants, video was turned off during recording. Notes were taken during the interview and Zoom services such as auto-transcription, cloud storage system and audio-recording were used to collect, process and store data.

The participants answered the same semi structured interview questions, in the same order, and the auto transcribed responses were reviewed to ensure transcripts

corresponds with the original responses. Some participants' statements on the transcript were contradictory to the original response due to pronunciation errors, however, all spelling errors were corrected after member check. The participants answered nine semi structured interview questions framed from research questions that described the perspectives of African immigrants on LTBI treatment hesitancy.

Etraction of Significant Statement

Participants' interview transcripts were repeatedly analyzed to ensure only the most relevant and descriptive information was used to support the study's objectives. To ensure trustworthiness, the interview questions used in exploring the perspectives of African immigrants living in the United States on LTBI treatment hesitancy were carefully formulated in accordance with the theoretical framework and the study research questions.

Participants responses were collected and analyzed to answer the main research question. A total of nine questions were asked during the interview process with some variation based on the flow. The final question provided participants with the opportunity to ask questions, make additional comments, or revise their responses as necessary (Appendix C). The nine interview questions answered Research Questions 1 and 2. Participants' responses were analyzed to identify patterns and themes. Since this research is generic qualitative approach, I was able to use different types of analysis which include interpretative phenomenological analysis (IPA) that allowed me to analyze how participants make meaning from their own words.

Table 4*Samples of Excerpts*

Priori codes	Participant	Excerpts
Dealy	N-005	“Treatment hesitancy can include refusing or not taking medication or being skeptical of the treatment plan's effectiveness or safety.”
Rejection	R-007	“LTBI treatment hesitancy, among other treatment recommendations, is perceived and believed to be a common issue among African immigrants living in the United States.”
Nonadherence/discontinuation		
No Diseases	Z-001	“I don't think LTBI treatment is necessary because I am not sick, why fix it when it is not broken.”
I am not sick.	F-004	“A patient needs to experience a particular disease or a health issue for treatment to occur.”
No Active TB symptoms		
BCG vaccine is misleading.	N-006	“LTBI is wrongly diagnosed because most Africans born between 1970 and 90s took the BCG, a vaccine for tuberculosis disease that is not used in the United States, which makes most African test positive for LTBI; LTBI treatment is a waste of time and an unnecessary idea.”
False positive diagnosis of LTBI		
There is no adequate information to make an informed decision.	K-004	“I feel African immigrants are hesitant because there is no adequate information to convince us for the need for the treatment.”
Misinformation		“African immigrants wish they have more information about the risks and benefits of LTBI treatments, the information is always inaccurate, and they expect us to accept it.”
The government is using LTBI treatment as a means of generating money.	S-006	“The Government is either using us to test the effectiveness of the medication or just to make money for the pharmaceutical companies.”
Africans are used for Experiments/Guinea pigs.	K-003	“The LTBI treatment is an experiment, and they are using African immigrants as guinea pig.”
Government is using Africans to test medications.	S-006	“The government uses force to promote the acceptance and regulates the provision of LTBI medication.”
LTBI treatment is being forced on African immigrants to obtain of school admission, residency, and employment.	R-007	“In healthcare, patients are typically given options when it comes to their treatment plans. However, when it comes to the treatment of LTBI among African immigrants, there appears to be a lack of options available.”
Africans are not given the chance to make their own choice.		
Limited choice of treatment		

Priori codes	Participants	Excerpts
LTBI medication harmful side effect	A-002	“The health providers promised me that there would be no adverse effect other than usual medication reaction, but I had a terrible experience.”
Family discouragement Nervousness Anxiety related to fear of the unknown	F-004	“A relative took isoniazid one of the LTBI medication and ended up in kidney problem related to isoniazid adverse effect.”
Shared experiences from family and friends creates fear and discourages the intent to accept, adhere to or complete LTBI treatment.	K-003	“There may be some exaggeration in how people share their experiences, it's worth noting that individuals can have varied side effects when undergoing LTBI treatment.”
Africans see TB related issues as dirty and feel they are being called dirty.	A-002	“African immigrants are seen as dirty people, the moment they start taking LTBI treatment.”
African immigrants feel ashamed.		
Africans are unnecessarily targeted for TB.	S-006	“The fear of being judged or discriminated against contributes to hesitancy in seeking or adhering to LTBI treatment.”
LTBI treatment is seen as prejudicial treatment.	A-002	“Africans should not be labeled with LTBI treatment because we are all humans and TB is a global disease.”

Themes were identified from the participants responses that aligns with the priori codes generated from literature review, theoretical framework, and pilot study. I manually analyzed the responses using codebook thematic analysis. Codebook thematic analysis is the thematic analysis that uses a set of predetermined codes and structured codebooks to analyze from a deductive standpoint (Ritchie et al., 2022).

A total of 24 codes, nine categories, and seven themes from the nine semi structured interviews, and the two-participant pilot study interviews are presented in Table 5.

Table 5*Codes, Categories, and Themes*

Codes	Categories	Themes
Dealy Rejection Nonadherence/discontinuation	LTBI treatment hesitancy exists amongst African immigrants.	LTBI treatment hesitancy is common among African immigrants in the US.
No Diseases I am not sick. No Active TB symptoms BCG vaccine is misleading. False positive diagnosis of LTBI	No need to accept LTBI treatment	LTBI treatment is not necessary
There is no adequate information to make an informed decision. Misinformation	Limited information.	Lack of adequate information on LTBI treatment
The government is using LTBI treatment as a means of generating money. Africans are used for Experiments/Guinea pigs. Government is using Africans to test medications.	Trust issues Unfavorable policies	The Government is not trustworthy
LTBI treatment is being forced on African immigrants to obtain of school admission, residency, and employment.	Forced treatment.	LTBI treatment is imposed

Codes	Categories	Themes
Africans are not given the chance to make their own choice.		
Limited choice of treatment		
LTBI Medication side effect Long term effect	Fear of medication side effect	LTBI has harmful side effect
Family discouragement Nervousness Anxiety related to fear of the unknown		
Shared experiences from family and friends creates fear and discourages the intent to accept, adhere to or complete LTBI treatment.		
Africans see TB related issues as dirty and feel they are being called dirty. African immigrants feel ashamed.	Africans are labeled	LTBI treatment is an instrument of stigmatization and discrimination
Africans are unnecessarily targeted for TB. LTBI treatment is seen as prejudicial treatment.		

Issue of Trustworthiness

The trustworthiness and rigor of a study is the use of several levels of validation to describes the confidence in data, interpretation, and methods used to ensure the quality of the study (Adler, 2022; Nyirenda et al., 2020). Lincoln and Guba (1985) utilized four

general criteria in their approach to trustworthiness. These include credibility, transferability, dependability, and confirmability. These criteria are also incorporated into perspectives from other experts who have written on trustworthiness in qualitative research. This section discusses the study's strength and evidence of trustworthiness, as well as the strategies used to ensure trustworthiness during the research study.

Credibility

Credibility is a trustworthiness validation concept that corresponds to internal validity of qualitative research (Hayashi et al 2021; Im et al. 2023) there are many methods used to attain research study credibility. Lincon and Guba (1985) identified data collection triangulation, research triangulation prolonged engagement and persistent observation as techniques for acquiring qualitative study's credibility. Further, external evaluation can be conducted to ensure that research data analysis and results are free from researcher's bias and ensure the results align with the research questions.

It is noteworthy that this study applied thick description; a qualitative research strategy that provides a detailed description of the research setting, methods, and participants demographics. A thick description provides a comprehensive understanding of the research context. Thick description includes background information, cultural and social factors that may influence the phenomenon of interest, and the rationale for the study (Finn et al., 2022). Thick descriptions of this study, found in chapter three, include a detailed explanation of methods used, detailed enough to allow readers draw conclusions, and interpret the data themselves, which provides an ideal medium for transferability and replicability.

Data collection is an important aspect of research study that allows the researcher to adequately answer research questions and determines the outcome of the study (Kwok et al., 2022; Howard et al., 2023). Howard et al. (2023), suggest that researchers should ensure that participants have a thorough understanding of the research. I ensured the participants understand the entire research by simplifying the informed consent, and interview questions in simple and readable English language, free of medical terminologies and give the participants a chance of self-expression through open-ended interview questions.

To further ensure good data, member checking was applied to enhance credibility. According to Motulsky (2021), member checking gives the participants a sense of inclusion, promotes participant loyalty, validates research data accuracy, and provides a trustworthy relationship between the researcher and the participants. Member checking was achieved by sharing interview response transcripts with the participants. The participants reviewed the data, identified discrepancies, missing data and inaccuracies.

Triangulation involves using multiple sources or methods to collect and analyze data, to increase the rigor and trustworthiness of the research findings (Johnson et al., 2020). Triangulation was achieved by recruiting participants from different demographics to include age categories, gender, and countries of origin. Triangulation provides an ideal medium to cross-check the data and ensure that responses are consistent and reliable. In addition to member checking techniques and triangulation, I also applied persistent observation, in which the data were repeatedly reviewed until the closest factors to the research questions were identified to provide an in-depth correlation to the research topic.

Transferability

Transferability refers to the applicability of research findings to a similar population, context, or phenomenon. Transferability is also used interchangeably with generalizability and external validity, which refers to the evidence the research study provides to the readers that the research finding applies to other populations, situations, and time (Rose & Johnson, 2020). The researcher is responsible for providing a complete description of the entire research process. To ensure transferability, I use thick description, which provides sufficient details regarding the site, participants, and data collection methods used during the study. I also ensured uniformity of my interview questions for all participants.

Dependability

Dependability is the reliability and consistency of research findings. Korstjens and Moser (2018) suggested that the dependability of a study can be strengthened through audit trails and triangulation of data sources. According to Jonson et al. (2020), dependability also means that other researchers should be able to use the same research method and achieve comparable results. To ensure the dependability of this study, I implemented a logical, traceable, and reproducible process and thoroughly documented it.

This research process was developed using a clearly defined research method, approach, and design. The target population was well-defined, and participant recruitment was carried out based on strict inclusion criteria. To ensure consistency in data collection, the data collection process was standardized using a semi structured

interview protocol consisting of nine questions derived from the study's theoretical framework, literature review, and pilot study. Data were collected through audio-taped open-ended interviews; responses were transcribed verbatim and validated via member checking. The interview guide provides detailed information of a replicable research process (Appendix C).

Confirmability

According to Elo et al. (2015), conformity is the degree to which the research findings are objective and not simply a product of the researcher's bias or subjectivity. Some strategies to ensure confirmability include transparency and multiple sources of data. This study provided confirmability by ensuring full awareness of self-foundational knowledge to prevent bias and using supervisor and peer review to ensure the finding is free from bias. Confirmability was achieved through clarification and validation of interview responses by adequate probes during interviews, verbatim transcription, and member checking.

Study Results

The data collection instruments consisted of nine main questions and seven probing questions. The interview questions as listed in Appendix C were strategically crafted to enable participants to provide valuable responses that adequately address the primary research questions. The research question used to guide this study were: RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy? RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

Upon conducting a thorough analysis of my research data, I was able to identify and extract seven main themes that closely answered the research questions: (1) LTBI treatment hesitancy is common among African immigrants in the United States, (2) LTBI treatment is not necessary, (3) Lack of adequate information on LTBI treatment, (4) LTBI treatment is imposed, (5) The Government is not trustworthy, (6) LTBI treatment has harmful side effects, and (7) LTBI treatment is an instrument of stigmatization and discrimination.

These themes emerged as prominent patterns that were consistent across the data, indicating their significance. Through further analysis, these themes provide a deeper understanding about the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. The participants' responses provide meaningful insights. The following sections present the seven themes representing the participants' responses from the semi structured interviews.

Direct quotes from the participants' responses provided in-depth insight into the perspectives of African immigrants living in the United States on LTBI treatment hesitancy and adequately answered the research question. The Themes 3,4, 5, and 7 answered RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy? Theme 1, 2, and 6 provided a detailed insights into RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence? In an intertwined manner, the identified themes provide valuable insights into the perception of LTBI treatment among

African immigrants living in the United States and help understand why LTBI is usually delayed, discontinued, or rejected.

Theme 1: LTBI Treatment Hesitancy is Common Among African Immigrants in the United States

Treatment hesitancy refers to the reluctance, delay, or rejection that individuals may have in seeking or accepting a recommended medical treatment (Akuffo-Addo et al., 2022). Participants were asked if there is LTBI treatment hesitancy among African immigrants living in the United States. All participants believe that LTBI treatment hesitancy is a common phenomenon among African immigrants living in the United States. Participant K-003 believes that LTBI treatment hesitancy exists among African immigrants living in the United States. Participant N-005 in a very emphatic attitude, explained “Treatment hesitancy can include refusing or not taking medication or being skeptical of the treatment plan's effectiveness or safety.”

Participant S-006 believes that treatment hesitancy can arise from a range of factors such as lack of information and concerns about the medication side-or adverse effects. Participant R-007 emphasized that “LTBI treatment hesitancy, among other treatment recommendations, is perceived and believed to be a common issue among African immigrants living in the United States.”

All the eight participants believe LTBI treatment hesitancy will continue to grow amongst African immigrants. Participant A-002 stated that “Everyone in my family tested positive for LTBI and none of us took the medication as suggested by our respective department of health.” Participant A-002 further explained that “LTBI treatment

hesitancy is common because the African immigrants lacks confidence in the treatment regimen which causes rejection, delay, or non-adherence to the treatment.” Participant M-008 stated “LTBI treatment hesitancy is common amongst us, because we have concerns about what the medication could do to us.”

Participant R-007 further explained that “nine out of 10 Africans that took LTBI test have not taken the LTBI test and will not be likely to.” According to Participant Z-001 “LTBI treatment hesitancy is common and African immigrants they will continue to hesitate because of skepticism, lack of adequate information to make informed decisions and no improvement in the LTBI medication information.” African immigrants believe LTBI treatment hesitancy is a common issue, and it is likely to persist.

Theme 2: LTBI Treatment is not Necessary

Unnecessary treatment is a medical procedure or intervention conducted even though it is not medically justified to benefit the recipient (Klamerus et al., 2019). Unnecessary treatment refers to medical procedures that an individual or a group does not need. Participants were asked to describe the effectiveness of LTBI treatment to determine if the treatment is important or necessary. This study participants perceive and believe LTBI treatment hesitancy as a normal option because they feel it is not necessary. Seven participants feel there is no reason to accept the treatment because there is no active symptoms of tuberculosis. One participant feel he may accept it but is not fully convinced.

Participant Z-001 stated that “I don’t think LTBI treatment is necessary because I am not sick, why fix it when it is not broken.” Participant F-004 feels that a patient needs

to experience a particular disease or a health issue for treatment to occur. Participant K-003 feels that if a person is not experiencing any health issues LTBI treatment is unnecessary.

Participants A-002 believes that most Africans have at some point taken the Bacille Calmette-Guerin (BCG) vaccine hence, LTBI diagnosis will always produce a false-positive result and believes hence there is no reason to treat a false disease. Participant N-006 states that LTBI is wrongly diagnosed because most Africans born between 1970 and 90s took the BCG, a vaccine for tuberculosis disease that is not used in the United States, which makes most African to test positive for LTBI. Participant N-006 perceive LTBI treatment as a waste of time and an unnecessary idea.

The participants strongly believe that treatment for LTBI should only be administered in specific cases. According to participant S-007 “I don’t think LTBI treatment is necessary, I think it should be given to individuals who have been exposed to active TB or those who have not received the TB vaccine.” Participant M-008 believes that African immigrants living in the United States should not receive LTBI treatment because they are in a perfect health condition and there is no need for treatment. Participant M-008 states “The treatment can only make you sick, because there is nothing to treat.”

Theme 3: Lack of Adequate Information on LTBI treatment

Lack of information refers to a situation where there is insufficient information about data or knowledge about an issue to make an informed decision (Galletta et al., 2022). Participants were asked to describe the misconceptions and their knowledge about

LTBI treatments hesitancy among African immigrants living in the United States. All the participants believe that there is lack of adequate information on LTBI amongst African immigrants living in the United States, and hesitancy is due to lack of awareness and education to make an informed decision. Some African immigrants are unaware of the benefits of LBTI treatment because there is no clear communication about the medication information. Participant Z-001 stated “The little information they gave us are false information: Participant K-004 states “I feel African immigrants are hesitant because there is no adequate information to convince us for the need for the treatment.”

The information available about LTBI treatment solely inform people about the benefits; however, lack of information to the participants encompass the information about the risks and benefits of the treatments. Similarly, Participant F-005 states that “the government only provides the benefits of the medication, and always dodge the risks and side effects of the medication.” Participant A-002 states that I believe LTBI hesitancy is common amongst African immigrants living in the United States because they are not telling us the truth about the medication side effects.” Participant A-002 further explained that there has been no update in the medication for many years and feels that the current information is outdated.

The absence of comprehensive medication information is perceived by participants as an obstacle to successful treatment of LTBI. Participant K-004 stated that “African immigrants wish they have more information about the risks and benefits of LTBI treatments, the information is always inaccurate, and they expect us to accept it.”

Participant K-004 further explained that most Africans reject LTBI treatment because the information is not detailed.

Theme 4: LTBI Treatment is Imposed

Imposition is the act to exercise authority to control a situation or an individual by forcing or influencing others without their consent, agreement, and option to make an informed decision (Douglas et al., 2020; Dunn et al., 2023; Raposo, 2019). Participants were asked to share their opinion if LTBI treatment is voluntary and if there are options. Participants believe that there is LTBI treatment hesitancy among African immigrants living in the United States and feel that LTBI treatment is imposed. Participant S-006 believes that the government uses force to promote the acceptance and regulates the provision of LTBI medication.

Participant R-007 states that “In healthcare, patients are typically given options when it comes to their treatment plans. However, when it comes to the treatment of LTBI among African immigrants, there appears to be a lack of options available. Participant Z-001 states that “I was left with no other choice but to accept the treatment, without being offered alternative options or considering any personal circumstances.” Participant K-003 stated that “Imposing LTBI treatment on African immigrants raises questions about the fairness and equity of the healthcare system, as it lacks the personalized and culturally sensitive approaches to healthcare delivery.”

Participant K-004 states “I had to take LTBI treatment to gain school admission and I had no choice.” Participant K-004 further explained “Because I was forced, I started taking the medication and never complete the treatment.” Participant Z-001 thinks

African immigrants are hesitant because they are forced to take the medication. In some states, it is mandatory to provide proof TST, negative chest x-ray to gain admission into any healthcare school; hence, most African immigrants living in the United States feels compelled to take the LTBI treatment because they need to be in school.

According to Participant N-005, African immigrants living in the United States feel apprehensive about dealing with the United States immigration service since TB testing is one of the medical screenings required for immigrants, and this requirement is mandatory. As a result, Participant N-005 believes that African immigrants often fear the United States immigration service, leading them to accept medication to avoid delays or denials of their residency paperwork. Participant N-005 further explained, “We only take the medication and discard it since there is no follow-up assessment to verify the treatment adherence.”

Theme 5: The Government is not Trustworthy

Lack of trust or mistrust in the government is the doubt or suspicious feeling that may make someone question other people’s intention and motivation (Che et al., 2023; Rockers et al., 2012). Participants were asked to describe the factors that contribute to African immigrants’ hesitancy to seek or accept LTBI treatment. All the participants believe that lack of trust in the United States government, significantly contributes the challenge faced by African immigrants in accepting LTBI treatment. All the participants perceive lack of trust in the government as a direct barrier to LTBI treatment. Participant R-007 stated that “I believe the government is using we Africans to experiment tuberculosis treatment, just as they did during syphilis experiment.” Participant S-006

stated “I suspect there is a hidden agenda behind the LTBI medication, the Government is either using us to test the effectiveness of the medication or just to make money for the pharmaceutical companies, so I cannot trust the Government.” Participant K-003 stated that “The LTBI treatment is an experiment, and they are using African immigrants as guinea pig.”

Participant Z-001 stated, “I am hesitant because I think the government has some hidden agenda, this is how they execute their unethical behavior.” Participant M-008 stated that “The infamous Tuskegee syphilis study is one of the reasons why African immigrants will not want to accept LTBI treatment.” The participants said LTBI treatment is not seen as a therapy instead an introduction of the actual disease to African immigrants.

Participant A-002 expressed disbelief in the honesty of the government and suspected that the government has a hidden agenda. Participant N-005 also shared the same sentiment, stating that if the syphilis study did indeed occur, then it is highly possible that African immigrants living in the United States are being used for experiment. Based on the responses of all the participants, lack of trust in the policies and treatment methods implemented by the government is the leading cause of LTBI treatment hesitancy among African Immigrants living in the United States.

Theme 6: LTBI Treatment has Harmful Side Effects

Medication side effects refers to the undesirable reactions experienced while taking any medication or treatment (Due, 2023; Khali, 2020). Participants were asked to share their perspectives on LTBI treatment and its side effects. This study participants

believe that medication side effect is the leading reason for LTBI treatment hesitancy among African immigrants living in the United States. Participant M-008 stated that “As much I wanted to accept the LTBI medication and complete the treatment regime, I feel LTBI treatment harmful side effects is unavoidable, hence, discourages me from accepting the medication.” Participant A-002 stated that “The health providers promised me that there is no adverse effect other than usual medication reaction, but I had a terrible experience.” Participant S-006 noticed some unusual symptoms, discontinued the medication, and experienced yellowing of the eyeball and the nails for six months after discontinuing the medication regimen. As a result, participant S-006 did not complete the treatment.

Participant F-004 said “A relative took isoniazid one of the LTBI medication and ended up in kidney problem related to isoniazid adverse effect.” Participant F-004 was discouraged from accepting the LTBI treatment due to the relative’s experience, thus LTBI treatment side effect is perceived as a barrier to LTBI. Participant M-008 perceives LTBI treatment side effect as a significant reason why most African immigrants living in the United States delay or reject LTBI treatment. Participant K-003 stated that, “There may be some exaggeration in how people share their experiences, it's worth noting that individuals can have varied side effects when undergoing LTBI treatment.” Nevertheless, these experiences were shared among all participants.

Theme 7: LTBI Treatment is an Instrument of Stigmatization

Stigma is a social phenomenon that involved labelling, stereotyping and discrimination against individuals or a group of people based on certain attributes or

characteristics that present a trait that are perceived as a deviance for the societal, normalcy or expectation (McKenzie et al., 2023). Stigma often leads to negative attitudes prejudice and exclusion and may cause harm to the people experiencing it. Participants were asked to share how stigma contributes to LTBI treatment hesitancy among African immigrants living in the United States. Eight participants perceived LTBI treatment as an instrument of stigmatization, hence contributing significantly to treatment hesitancy among African immigrants living in the United States.

Participant K-003 thinks African Immigrants perceive fear of judgement and discrimination when they think about the stigmatization surrounding the treatment, they need for LTBI. Participant S-006 stated that “The fear of being judged or discriminated against contributes to hesitancy in seeking or adhering to LTBI treatment.” Participant A-002 feels that African immigrants are seen as dirty people, the moment they start taking LTBI treatment.” Participant N-005 Stated that “Some African immigrants feel that the government is using LTBI treatment to label African immigrants living in the United States.”

Participant Z-001 feels that TB is a stigmatized condition and LTBI treatment hesitancy exists among African immigrants because of treatment avoidance to prevent stigma. Participant R-007 feels that other immigrants who are not labeled for TB, see Africans as disease carrier. Participant R-007 further explained that stigmatization contributes to African immigrants LTBI treatment hesitancy. Participant A-002 stated that “Africans should not be labeled with LTBI treatment because we are all humans, and TB is a global disease.”

Member Check Validation of Findings

Qualitative research designs encompass a range of data analysis characteristics and techniques, but researchers generally strive to evaluate the validity and trustworthiness of their studies, this involves assessing the rigor and accuracy of the research methods, as well as the credibility and transferability of the findings to other contexts (Nowell et al., 2017). Member checking is a process where researchers present the initial findings to the participants, allowing them to review and verify the accuracy of the data, interpretation, and conclusion (Motulsky, 2021).

Member checking is an essential component in qualitative research as it ensures the trustworthiness and credibility of the findings. Members check is one of the strategies used by Lincon and Guba, (1989) to increase the credibility of an investigation. Erdmann and Potthoff, (2023) suggested that member checking is time-consuming, as many participants did not reply on time which usually discourages many researchers from checking with participants.

I used member checking during data collection and analysis, for the participants to validate the correctness of their responses which was time consuming as suggested by Erdmann and Potthoff, (2023). The transcribed responses were sent to the participants, and they responded with the necessary corrections. As part of the continuous member check process, the participants of this study will receive a summary of the final study to include results and a description of their perspectives.

Summary

Chapter 4 provided the results of data analysis, and these results were used to answer the main research questions guided my study:

RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

I used nine semi structured interview questions to explore the perspectives of African immigrants living in the United States on LTBI treatment hesitancy. Seven themes emerged to express the perspectives of the participants. This chapter provided a detailed analysis of the data collection and analysis process. The information provided in this chapter included interview location, time, duration, participants demographic information, data collection, analysis process and findings.

The participants provided a set of robust answer to the research questions from which seven themes were generated, and provided insight into how African immigrants perceive LTBI treatment hesitancy. The participants' responses were meticulously transcribed and analyzed, ensuring that accuracy and clarity were maintained throughout the process. To verify the authenticity of the data, I conducted member checks, which further enhanced the validity of the transcription. Chapter 5 delves into the interpretation, meaning, and implications of the research outcomes and their impact on social change and recommend additional studies for the future as needed.

Chapter 5: Discussion, Conclusion and Recommendation

Introduction

The purpose of this study was to explore and gain an in-depth understanding on the perceptions of African immigrants living in the United States on LTBI treatment hesitancy. This research identifies and describes the perspectives, thoughts, and belief of African immigrants living in the United States the underlying factors that contribute to the rejection, delay, and nonadherence to LTBI treatment amongst African immigrants.

The significance of this study can be divided into three parts. The first significant part is the direct application toward the development of public health education to promote LTBI treatment acceptance among African immigrants living in the United States. The second significant part of this study is the recommendation for additional studies to better understand the underlying factors that contribute to LTBI treatment hesitancy. The third significant part is the support it will provide to global eradication of TB by 2035.

To gain a genuine insight on the perspectives of African immigrants living in the United States on LTBI treatment hesitancy, I used a generic qualitative research approach, guided by Anderson healthcare utilization model. The Anderson healthcare utilization model uses three dynamics (predisposing factors, enabling/disabling factors) to analyze, predict or determine healthcare utilization usage. The predisposing factors include characteristics such as race, age, and health beliefs. The enabling factors include family support, access to health insurance, and one's community. The need factors represent the perceived and the actual need for healthcare services (Pengid et al., 2022).

Eight participants were interviewed with the same set of nine semi structured interview questions to explore their perspectives on LTBI treatment hesitancy. Themes were identified from the participant responses that aligns with the priori codes generated from the exhaustive literature review, theoretical framework, and pilot study. This chapter provides a summary of the research findings interpretation, describes the study limitation, provides recommendations for additional research, and discuss the research implication on positive social change, and study conclusion.

Overview

According to the WHO Global TB Report of 2022, TB remains one of the most fatal infectious diseases in the world, as reported by Petersen et al. (2022). Despite making substantial progress towards achieving the global objective of eradicating TB by 2035, the CDC still reports a substantial number of TB cases, highlighting the persistent public health threat posed by the disease. The CDC's statistics from 2020 indicate a significantly high incidence of TB, indicating that TB continues to be a major public health concern.

According to the WHO Global TB Report 2022, over 4100 people lose their lives to TB each day, close to 28,000 people fall ill, and TB currently remains one of the world's deadliest infectious killers (Petersen et al., 2022). There is a current estimate that over 13 million people in the United States are infected with TB, most of which are caused by the reactivation of untreated LTBI (Schwartz et al., 2020). Verma et al. (2022) identified significant racial and ethnic disparities in individuals with TB disease in the

United States. Also, Filardo et al. (2022) identified that foreign-born U.S. citizens or residents have the highest rate of TB, with 70 percent.

In 2020, 71% of TB cases occurred among foreign-born residents, the proportion was the same in 2019 and 2020. The incidence (cases per 100,000 population) had increased from 71 to 79 in 2021 (Filardo et al., 2022). According to the CDC (2020), 71.4% of individuals diagnosed with TB were born outside the United States with 19.7% Black, 30.2% Latinx, and 35.3% Asian.

LTBI treatment is critical to prevent the development of active TB which is life-threatening. Global efforts to combat TB have saved an estimated 66 million lives since 2000 (Petersen et al., 2022). One recommended strategy to eliminate TB is to address and treat LTBI. To treat LTBI, the United States Public Health Department invests an exceptional effort to ensure free treatments for individuals living with LTBI.

Despite efforts to improve LTBI treatment and prevention of active TB, African immigrants living in the United States face significant barriers to accessing free, safe, and effective treatment for LTBI due to their hesitancy in seeking and completing the treatment (Manful et al., 2020; Petersen et al., 2022). LTBI treatment hesitancy may have profound implications for the health and well-being of African immigrants in the United States. The need for educative and culturally sensitive approaches to promote treatment uptake and completion among African immigrant population in the United States is crucial to reducing the burden of TB.

Although researchers have investigated LTBI treatment adherence and hesitancy in many foreign-born United States citizens, no research has been conducted to explore

the perception of African immigrants living in the United States on LTBI treatment hesitancy. In this research, I aimed to gain a comprehensive understanding of the various factors contributing to LTBI treatment hesitancy to recommend an approach to address it. Data were collected and analyzed between September and October 2023. I identified seven main themes from 24 codes, and nine thematic categories.

The following research questions guided my study:

RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

To adequately address these research questions, I developed nine semi structured interview questions guided by the three dynamics of Anderson healthcare utilization model, the literature review, and the priori codes generated from the research pilot study. I used a generic qualitative research approach which allowed the study participants to freely express themselves without any qualitative research protocol restriction. A total of ten participants were recruited, nine consented to participate, and eight were interviewed. Although I anticipated interviewing 10-12 participants, the participant sample size was determined when research saturation was achieved.

Public health researchers have an opportunity to play a critical role improving the health outcomes of African immigrants by incorporating educational interventions aimed at correcting misconceptions about LTBI treatment. These interventions can empower

African immigrants to make informed decisions about their health, leading to better health outcomes and an overall improvement in the well-being of the community.

The study's results can be used by the local Public Health Departments, CDC, and WHO to understand the perspectives of African immigrants residing in the United States, develop a better approach to encourage the acceptance of LTBI treatment, reduce the prevalence of active TB, and support the global strategy of eradicating TB by 2035.

Interpretation of Findings

Previous studies identified cultural beliefs, religious beliefs, stigma, anxiety, and lack of trust in available treatment as the common factors that contributes to LTBI treatment hesitancy among other populations (Franke et al. 2022; Omenka et al., 2020; Spence et al., 2023). Previous studies also revealed that a lack of awareness and education on the clinical implications of LTBI contribute to its hesitancy (Heyd et al., 2021; Mancuso et al., 2022 Spruit et al., 2021). There are some similarities between this study's findings and previous studies. For example, this study confirms stigma, and medication side effects as hindering factors to LTBI treatment among African immigrants living in the United States. However, this study indicated that there are reasons other than the rudimentary cultural and religious beliefs contributing to LTBI treatment hesitancy among African immigrants in the United States.

This study provides new insight though treatment imposition to why some African immigrants living in the United States are hesitant to receive treatment for LTBI. While the findings of the study validate existing knowledge, it also offers more in-depth insights into the thoughts and perspectives of African immigrants living in the United

States. In addition, this research, purpose, and questions shifted from generic phenomenon of LTBI treatment hesitancy to a more specific phenomenon. For example, previous studies identified lack of trust in government, but this study provides specific examples for the lack of trust.

Through this generic qualitative study, I found that African immigrants in the United States perceive and believe that (1) LTBI treatment hesitancy is common among African immigrants in the United States, (2) LTBI treatment is not necessary, (3) LTBI treatment hesitancy is caused by lack of adequate information on LTBI treatment, (4) LTBI treatment is imposed, (5) The government is not trustworthy, (6) LTBI treatment has harmful side effects, and (7) LTBI treatment is an instrument of stigmatization and discrimination. This study provides new insight into LTBI treatment hesitancy among African immigrants through a perception of imposition of LTBI treatment and the belief that the government is using African immigrants for research study.

Theme 1: LTBI Treatment Hesitancy is Common Among African Immigrants in the United States

LTBI treatment hesitancy is prevalent in the United States, and it is common among the foreign-born United States citizens (Filardo et al., 2022; Khan et al., 2022; Verma et al., 2022; Wong et al., 2021). The perceptions of this study participants confirms the prevalence of LTBI treatment hesitancy among African immigrants living in the United States. According to participant K-003 “LTBI treatment hesitancy is common among African immigrants, and the few that manage to accept the treatment don’t often complete the medication regimen.”

All participants in this study believe that LTBI treatment hesitancy is prevalent among African immigrants living in the United States. According to participant S-006 “an average African immigrant in the United States is likely to be hesitant to LTBI treatment.” This study found that an African immigrant will either refuse LTBI treatment or not adhere to the medication regimen. The findings of this study provide further evidence that reluctance to undergo treatment for LTBI is a significant issue among African immigrants, highlighting the need for public health interventions through additional research and education.

Themes 2: LTBI Treatment is Not Necessary

Unnecessary treatment is a medical procedure or intervention conducted even though it is not medically justified to benefit the recipient (King et al., 2023; Klamerus et al., 2019). This study literature review described LTBI treatment as an essential preventive strategy to prevent active TB (Huaman & Sterling, 2019; Sharan et al., 2022; Sterling et al., 2020). However, the participants of this current study perceive and believe LTBI treatment hesitancy as a standard option because they feel it is unnecessary. Only one study participant felt LTBI treatment is necessary based on the participant’s level of education and health literacy; the other participants feel there is no reason to accept the treatment because there are no active symptoms of tuberculosis. The participants believe that an active clinical manifestation of a disease must be present for a treatment to occur. This generic qualitative study found that African immigrants perceive and feel that LTBI treatment is not necessary.

Further, the participants believe that LTBI tests amongst African immigrants will always be false positive due to BCG vaccine taken by most African immigrants when they were young. Although there is a relationship between BCG vaccine and TST positive result and can last for more than four decades (Nakken et al., 2023). Studies also confirm that if TST induration is more than 10 mm in individuals with a history of BCG vaccination, the induration is a result of LTBI and not a cross-reaction with BCG vaccine (Arumairaj et al., 2023; Nakken et al., 2023). However, the participants in this study feel that LTBI tests are conducted without any consideration for the history of the BCG vaccine that most Africans received during their childhood.

Theme 3: Lack of Adequate Information on LTBI Treatment

Lack of information refers to a situation where there is insufficient information about data or knowledge about an issue to make an informed decision (Galletta et al., 2022; Kapadia, 2023; Suarez-Lledo & Alvarez-Galvez, 2021). Previous studies revealed that lack of information contributes to LTBI treatment hesitancy (Degelin et al., 2020; Naqvi et al., 2022; Spruijt et al., 2021; Verma et al., 2022). This current study confirms that the lack of adequate information on LTBI treatment contributes to its hesitancy among African immigrants living in the United States. All the participants in this study believe that there is a need for more information on LTBI among African immigrants living in the United States.

This study found that African immigrants living in the United States need adequate information and education to make an informed decision on LTBI Treatment. This study further found that the information available to African immigrants in the

United States needs to be more comprehensive as the current information on LTBI treatment only offers the benefits, and not the associated risks. According to participant A-002 “Most African immigrants are unaware of the benefits of LBTI treatment because there is no clear information about LTBI medication.”

This study also found that the information on LTBI has not been updated for years, and the absence of comprehensive medication information is perceived as an obstacle to successful LTBI treatment. Hence, there is a need for more current research and up-to-date evidence-based clinical information that will facilitate the decision-making of African immigrants living in the United States on LTBI treatment acceptance.

Theme 4: LTBI Treatment is Imposed

Imposition is the act to exercise authority to control a situation or an individual by forcing or influencing others without their consent, agreement, and option to make an informed decision (Douglas et al., 2020; Dunn et al., 2023; Raposo, 2019). While the government recommends treating individuals who test positive, especially those working in healthcare, this study found that African immigrants living in the United States perceive and believe that LTBI treatment is imposed by the government (Heidary et al., 2022; Sterling et al., 2022).

As stated by one of the participants in this study, “Imposing LTBI treatment on African immigrants raises questions about the fairness and equity of the healthcare system, as it lacks the personalized and culturally sensitive approaches to healthcare delivery.” This study also found that there is a need for the government to develop a

force-free strategy to encourage and promote the acceptance of LTBI treatment amongst African immigrants living in the United States

Studies show that only a few states have laws that require reporting of LTBI (Linan et al., 2011; Vonnahme et al., 2023). However, the states that require LTBI diagnosis report only need this report for surveillance purposes. For example, the Missouri state Mo. Code Regs. tit. 19, § 20-2020 (2009) requires that certain occupation reports shall report the positive diagnosis or the suspicion of LTBI to the local health authority within three (3) calendar days of first knowledge or suspicion (Linan et al., 2011; Sterling et al., 2020; Vonnahme et al., 2023).

Although previous studies recommend the need to clarify LTBI diagnosis reports (Caruso et al., 2023; Linan et al., 2011). This study participants also suggest a need for more consistent LTBI diagnosis reports to establish the accuracy of LTBI incidence across the country. The LTBI diagnostic report facilitates surveillance and enables TB programs to identify patients who need to start preventive treatment. Many studies have demonstrated that screening for LTBI or active TB is a mandatory requirement for healthcare workers and certain academic institutions (Alsdurf et al., 2024; Chumpa et al., 2022; Meregildo-Rodriguez et al., 2023; Thanassi et al., 2020). However, the participants of this study perceived this obligation as an imposition. The obligation to undergo screening may have contributed to their perception of it as a burden. To avoid the perception of treatment imposition, healthcare providers should provide patients with more education and informed information to make informed decisions.

Theme 5: The Government is Not Trustworthy

Lack of trust or mistrust in the government is the doubt or suspicious feeling that may make someone question other people's intention and motives of the government (Che et al., 2023; Rockers et al., 2012). Previous studies identified lack of trust in government policy as a contributing factor to LTBI treatment hesitancy in the United States (Omenka et al., 2020; Spence et al., 2023; Verma et al., 2022). All the participants perceive and believe that lack of trust in the United States government, significantly contributes to the challenge faced by African immigrants in accepting LTBI treatment.

Some studies also indicate that mistrust in government healthcare policies and interventions stem from past medical unethical injustices (Equils et al., 2023; Griffith et al., 2021; Jamison et al., 2019). Contributory factors to mistrust include the historical instances of unethical research practices, such as the Tuskegee study of the United States or forced sterilization programs experienced in other countries (Bajaj & Stanford, 2021; Morgan et al., 2023; Okorodudu & Okorodudu, 2021).

This current study confirms lack of trust as a hindrance to LTBI treatment among African immigrants living in the United States. This current study also found that historical ethical malpractices in medical research significantly contributed to the skepticism among African immigrants regarding government-promoted medical interventions, including LTBI treatments. This skepticism has made it challenging for most African immigrants to make informed decisions.

The African immigrants perceive that the government strategy to control the spread of active TB through the treatment of LTBI is not genuine (Franke et al., 2023;

Omenka et al., 2020; Parmer et al., 2022; Spence et al., 2023). In addition, here is a gap between the African immigrants and the government in terms of trust. This current study also revealed that the African immigrant population in the United States still perceive current medical practice as it was when medical malpractice was common. For example, participants R-007 mentioned that “the infamous Tuskegee Study is a major reason why African immigrants will not trust the government and will not accept LTBI treatment.”

This generic qualitative study confirms that African immigrants hold a strong belief that the government has hidden agendas, such as conducting experiments with new medications and intentionally benefiting pharmaceutical companies, among other motives. This perception plays a significant role in fueling the LTBI treatment hesitancy of African immigrants living in the United States.

Theme 6: LTBI Treatment has Harmful Side Effects

Medication side effects refers to the undesirable reactions experienced while taking any medication or treatment (Due, 2023; Khali, 2020). Previous studies identified that individuals taking LTBI treatment medication may experience some side effects, however, this study participants confirms that medication side effects are the primary reason for LTBI treatment hesitancy among African immigrants living in the United States.

According to previous studies, it is common for people receiving LTBI treatment to experience side effects like fever, chills, headache, dizziness, bone pain, malaise, cutaneous reactions, and gastrointestinal symptoms (Fehily et al., 2022; Lin et al., 2021). However, studies have identified that the LTBI treatment medication effects can vary

depending on the individual's medical history (Sadowski et al., 2023) Typically, people undergoing LTBI treatment will experience mild symptoms, such as headaches and urine discoloration (Hass et al., 2021; Lin et al., 2023; Sadowski et al., 2023). Recent studies have underscored the importance of thoroughly comprehending the side effects of LTBI treatment medications (Levin et al., 2023; Lin et al., 2021).

This study participants expressed concerns regarding the LTBI treatment medication harmful effects because the available information on LTBI treatment does not provide in-depth information on associated risks. Furthermore, some participants in this study shared their experiences on LTBI treatment adverse effects while undergoing LTBI treatment, leading them to refrain from completing it. This study suggests that some individuals may experience hesitancy in accepting the treatment due to the side effects associated with it. These findings provide an opportunity for healthcare providers to address these concerns and work towards improving the treatment experience for individuals seeking LTBI treatment.

Theme 7: LTBI Treatment is an Instrument of Stigmatization and Discrimination

Stigma is a complex social phenomenon that refers to the prejudiced, negative attitudes, beliefs, and behaviors directed towards individuals or groups who are perceived as different or deviant from societal norms (McKenzie et al., 2023). Stigma can manifest in various forms such as labeling, stereotyping, ostracism, or discrimination. Stigma can have severe consequences for the stigmatized individuals, including reduced opportunities, social exclusion, and a negative impact on their mental and physical health. (Lipsett et al., 2023; McKenzie et al., 2023).

Previous studies identified stigma as one of the factors hindering LTBI treatment acceptance and adherence (Franke et al., 2022; Mendonça & Hilário, 2023; Spence et al., 2023; Wong et al., 2021). In this research study, all participants perceived LTBI treatment as a strategy to stigmatize African immigrants, which significantly contributes to the acceptance or completion of LTBI treatment. The participants further explained that the stigma associated with LTBI treatment is due to the fear of being labeled as a carrier of tuberculosis, a disease that has a negative connotation in many cultures and societies. This generic qualitative study found that stigma significantly contributes to the reluctance of African immigrants living in the United States to accept or complete LTBI treatment.

Limitations of the Study

The notable limitations in this study include the potential unwillingness of the participants to give honest data because studies show that LTBI is considered a sensitive topic amongst immigrants because of stigma and employment requirements. Although my plan was to encourage participant honest response, it should be noted that, I have a limited ability to influence or control the participant sincerity; hence, I cannot ascertain if they are honest with the responses or not.

Further, the nature of participant recruitment and the available sample size, may not yield a good representative sample for African immigrants in the United States; For example, the Sub-Saharan Africa is comprised of forty-nine countries and there is a likelihood of not having participants from all these countries. Also, the eight participants in this study reside in five out of the fifty states in the United States. Inadequate

representative sample hinders the generalizability of the study for the entire African immigrants living in the United States.

Another notable limitation is social desirability bias where participants feel pressured to provide socially desirable responses that align with the researcher's expectation, instead of expressing their true opinion and responses. This was addressed by asking open-ended interview questions to allow participants to freely express themselves. I was aware that response bias may also occur, where participants may be hesitant to discuss their genuine perspective on LTBI treatment hesitancy due to social or cultural factors, potentially leading to incomplete or inaccurate data. Response biases were prevented by ensuring that the participants were aware that their identity is protected.

It is crucial to consider the impact of the participant pool as a limitation while conducting research. The nature of LinkedIn users is that of professionals, which plays a significant role in shaping their perceptions. Studies and statistics on LinkedIn indicate that the average user possesses some college credits or degrees, which makes it possible to recruit only a select group of highly educated individuals (Jeyaraman et al., 2022; Soubra et al., 2022). The findings of this study cannot be applied to the entire population as they only pertain to educated individuals. This study excluded uneducated individuals, who are essential to the population and may significantly impact the outcome. Therefore, it is not appropriate to generalize the results of this study to the broader population without considering the characteristics of the excluded group and their impact on the findings.

Similarly, most of this study participants are healthcare workers, and this may have significantly influenced their perception and responses. For example, five participants work in the hospital and doctor's office. This factor may have influenced their perception of LTBI treatment imposition because it is required for healthcare workers to screen for infectious diseases such as TB before employment (Caruso et al., 2022; Lima et al; 2024). Before starting work in healthcare, healthcare professionals must comply with specific tuberculosis (TB) screening and treatment policies. These policies aim to prevent the transmission of TB in healthcare settings and ensure the safety of both healthcare professionals and patients (Pagaduan & Altawallbeh, 2023). Given that a significant number of the individuals who took part in this study were healthcare professionals, their perception of feeling imposed upon them could have been influenced by the compulsory nature of their obligations. On this note, this perception is not generalizable to all African immigrants living in the United States, particularly those who do not work in healthcare.

Other limitations include the inability to access the participant's non-verbal cues or behavior, such as gestures, facial expressions, eye contact, level of confidence, and body language of the participants, which would have been helpful in prompting the participants during the interview and provide an opportunity to investigate further and psychologically validate the provided answers.

Recommendation

Future research on LTBI treatment hesitancy among African immigrants living in the United States should be conducted. Previous studies on LTBI have been focused on

immigrants living in the United States, but not so much has been done to specifically explore the perspectives of African immigrants. Studies show that many of the fundamental factors that contributes to LTBI treatment hesitancy include religious, cultural and preference issues (Degeling et al., 2023; Franke et al., 2022; Omenka et al., 2020; Spence et al., 2023).

This current study revealed a concern that the information available on LTBI has not been revised for several years. While this study participants perceive that LTBI treatment information have not been updated for years, studies show that the CDC, and the National Institute of Health (NIH) are constantly updating the LTBI treatment information. (Caruso et al., 2023; CDC & American Thoracic Society, 2003; Stantliff, et al., 2023;).

Although there has been some progress in developing economic evidence for LTBI screening and treatment, there are still considerable gaps in the information required for the implementation and scale-up of expanded LTBI screening and treatment programs, especially among traditionally difficult-to-convince populations (Kota et al., (2023). This study suggests a pressing need for better strategies to disseminate the current research and evidence-based clinical information on LTBI treatment, to African immigrants residing in the United States to assist them in making informed decisions about accepting LTBI.

One of the limitations of this current study is the representative sample size which is not sufficient to represent the target African population. For example, the participants of this study only include six countries out of the fifty-four countries in Africa and 49

Sub-Saharan Africa countries. There is a need to conduct research involving more participants from diverse backgrounds, ages, countries of origin, and education levels. Using a larger sample size will help determine if there are differences in the perspectives of a larger sample based on their backgrounds.

In addition, the participants of this current study are from five states out of the fifty states in the United States (Table 2). This study recommends further studies on LTBI treatment hesitancy among African immigrants living in more states to address how different states and local government policies affect the acceptance and adherence of LTBI treatment among African immigrants living in the United States.

Further, in this current study, the lack of adequate information was identified as a barrier to accepting LTBI treatment among African immigrants living in the United States. Studies show that education has the potential to play a significant role in shaping people's beliefs, attitudes, and behaviors towards healthcare practices (Long et al., 2020; Rizvi, 2022). In addition, Kouladoun (2023) suggested that individuals with higher levels of education tend to be more informed about health-related issues. This study recommends targeting subjects with higher education.

Future research on this phenomenon could focus on the relationship between the education of African immigrants living in the United States and the acceptance of LTBI treatment. Understanding these factors can help address the current misconceptions toward the acceptance of LTBI treatments. For example, education can equip individuals with knowledge to help adjust other factors contributing to LTBI treatment hesitancy, such as cultural and religious beliefs, to make informed decisions.

Notably, this study participants were recruited from LinkedIn, a platform used mainly by educated professionals. The participants' ages ranged from 31 to 54, and most held master's degrees. This age range and educational background may have influenced their perception and beliefs. While it is important to explore the perspectives of older participants, it is also essential to consider the younger individuals (between 18 and 40 years). Younger people may view the phenomenon differently due to their unique experiences, upbringing, and exposure to diverse environments. Including the opinions and attitudes of younger participants could offer new and more detailed insights into LTBI treatment hesitancy among African immigrants living in the United States.

Implications

In this generic qualitative study, I used semi structured interview questions to explore the participants of African immigrants living in the United States on LTBI treatment hesitancy. The generic approach allowed me to explore and obtain data from the participants without any qualitative approach rule or restriction. I attentively listened to the participants audiotaped responses and the transcripts were thoroughly scrutinized to obtain information that describes their true perspectives. Data were categorized and were manually analyzed for themes using the codebook approach. The emerged themes are the findings that describes the perception of African immigrants living in the United States on LTBI treatment hesitancy.

Using LinkedIn to recruit my participants has a significant implication particularly in terms of how participants education and profession influenced their perception. Hahn and Truman (2015) described individuals who are more educated to be

more receptive to health education campaigns. Studies show that education plays a crucial role in shaping an individual's perspective, beliefs, and attitude, and study participants with higher levels of education are likely to provide more insightful, drawing upon their academic backgrounds to support their perspectives on the phenomenon of interest (Rizvi, 2022; Thakur & Meadors, 2023). On the other hand, participants with lower levels of education may provide responses that are more straightforward and direct, potentially offering different but equally valuable perspectives (Kripalani et al., 2022; Montez, & Cheng, 2022).

Further, professionals working in specific industries or sectors may have specialized knowledge and expertise related to the phenomenon of interest, allowing them to provide unique insights that others may not possess. Most of this study's participants work in the healthcare field, and their responses were impacted by their profession's mandatory policies and regulations. For example, theme four (LTBI treatment is imposed) is from the five participants who are healthcare workers. These responses show a significant correlation between profession and perception.

Although this study validates the existing body of knowledge on the underlying factors that contributed to LTBI treatment hesitancy, it provides no new insights into LTBI treatment hesitancy. Exploring the perception of African immigrants living in the United States on LTBI treatment hesitancy, provides more supportive insights to the existing body of knowledge. For example, the literature review also shows that cultural beliefs, religious beliefs, government policies, education, medication side effects, and lack of trust in the government are common factors contributing to LTBI treatment

hesitancy in the United States (Degeling et al., 2020; Matakanye et al. 2021; Spence et al., 2023; Spruijt et al., 2021). Although there are several reasons why African immigrants living in the United States are hesitant to receive LTBI treatment. This generic qualitative study has identified the imposition of treatment as a critical factor that has been overlooked in the past. It is new that treatment imposition is an essential factor that researchers have not declared as a contributory factor to LTBI treatment hesitancy.

The results of this generic qualitative study could improve the available information on hesitancy towards treating LTBI. The outcomes can be used to create better educational material for the target audience. The findings of this study may lead to a positive social change by expanding the current knowledge, filling the literature gap on LTBI treatment hesitation among African immigrants residing in the United States, and correcting the perception and misconceptions about LTBI treatment.

The findings of this generic qualitative study are expected to have a positive social impact by

1. Providing a better understanding of how African immigrants perceive LTBI treatment.
2. Developing better strategies in correcting the misconception of African immigrants towards the available treatment.
3. Encouraging African immigrants living in the United States to accept LTBI treatment through public health education and prevent active TB.

These three positive social impacts align with the WHO's goal of eliminating tuberculosis as a public health threat by 2035.

Conclusion

The purpose of this generic qualitative study was to explore the perception of African immigrants living in the United States on LTBI treatment hesitancy. This study identified the following seven themes: (1) LTBI treatment hesitancy is common among African immigrants in the United States, (2) LTBI treatment is not necessary, (3) LTBI treatment hesitancy is caused by lack of adequate information on LTBI treatment, (4) LTBI treatment is imposed, (5) The government is not trustworthy, (6) LTBI treatment has harmful side effects, and (7) LTBI treatment is an instrument of stigmatization and discrimination.

This study provides supports the existing knowledge on LTBI treatment hesitancy among African immigrants living in the United States and provide new insight through treatment imposition. There is a correlation between the participants profession, education, and the perception that LTBI treatment is being imposed on African immigrants. The exhaustive literature review indicates that the United States government has a long-standing history of conducting unethical human experiments and engaging in research malpractice, particularly in the context of African Americans. Over the years, this history has contributed significantly to the perception that the government is using African Americans as test subjects for research purposes.

While it is essential to note that the study had only eight participants, their viewpoints align with previous research on treatment hesitancy, which shows that many African Americans are skeptical of medical research due to past experiences of exploitation and mistreatment. The findings of the study highlight the existence of a

widespread misconception among African immigrants in the United States about LTBI treatment. Public health departments can use these findings to develop more effective strategies to encourage African immigrants to accept, adhere to, and complete LTBI treatment.

This study participants perceived the lack of evidence-based information as the leading factor contributing to LTBI treatment hesitancy among African immigrants living in the United States. Although many factors contributed to LTBI treatment hesitancy among African immigrants living in the United States, addressing it requires an education-based approach.

It is essential to allocate more public health resources towards establishing outreach and educational initiatives for disease prevention. This action will require a collaborative effort from healthcare professionals, policymakers, and community groups to create a comprehensive program aimed at raising consistent awareness and educating African immigrants about LTBI, its consequences, and the necessity and importance of treating it.

The new insight gleaned from this study is treatment imposition. This insight provides valuable insights into treatment imposition, highlighting the importance of providing patients with education and choices. This new insight provides a valuable opportunity for public health advocates to ensure that patients receive personalized treatment that caters to their specific needs. This approach can help avoid any potential perception of forcing treatments upon patients and instead, provide a tailored healthcare experience that promotes patient satisfaction and compliance. The findings of this study

provide insight into the strategies to correct the misconceptions of African Immigrants living in the United States towards LTBI treatment hesitancy, promote the acceptance of LTBI treatment, prevent active TB, and support the WHO goal to eradicate TB by 2035.

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Appendix A: Letter of Invitation

Letter of Invitation

Title: Perception of African immigrants Living in the United States Towards Latent Tuberculosis Infection Treatment Hesitancy

My name is Akinwale Obatayo, and I am a doctoral student at the College of Health Sciences and Public Policy at Walden University in Minneapolis.

I am conducting research to gain a better understanding of the views and thoughts of African immigrants residing in the US on LTBI treatment hesitancy. My goal is to explore the reasons for the delays in seeking or accepting LTBI treatment and non-compliance with treatment.

I am looking for African immigrants who live in the United States, are at least 18 years old, and can read, write, and speak English. I am specifically looking for participants who have tested positive for tuberculin skin test or any other form of LTBI diagnosis and are willing to take part in the study. Please note that your identity will remain confidential, but your response will be recorded and used for research purposes.

If you choose to participate, I will schedule the interview at a time that suits you. The interview will take place over Zoom/ Microsoft Teams video conferencing and will last between 45-60 minutes. Your answers to the questions will be recorded and kept confidential. To protect your privacy, you will be given a number code that will be used during data analysis to prevent your personal information from being disclosed. After the study has been completed, I will share the results with you in a one to two-page summary or verbal presentation, depending on what is most suitable.

While there is no extra compensation beyond \$20 Amazon gift card, your participation in this study is highly valuable to this research. Research findings will provide insight into strategies that can help encourage timely treatment of latent tuberculosis infection, prevent active TB, and support the World Health Organization's efforts to eradicate TB globally.

If you are willing to participate, please suggest a day and time that suits you, and I will do my best to be available. If you have any questions, please do not hesitate to contact me (xxxxxxxxxxx@waldenu.edu) You can reach the Research Participant Advocate (if you have questions about your rights as a participant)

Respectfully,

Akinwale Obatayo

Participant Screening Email

You are invited to take part in a research study about the perception of African immigrants living in the US on LTBI treatment hesitancy. This study is part of the doctoral study for Akinwale Obatayo, a Ph.D. student at Walden University. During this stage of the research participant recruitment, I will conduct a participant screening to confirm that you meet the study's inclusion criteria as outlined in the recruitment flyer.

Please reply to this email with a short answer to the following questions.

1. How old are you?
2. Are you an African Immigrant living in the United States and how long have you resided in the United States.
3. Do you understand and speak English language?
4. Have you been tested positive for any latent tuberculosis infection tests?
5. Do you have access to Zoom or Microsoft Team videoconferences?

Very Respectfully,
Akinwale Obatayo
Ph.D. Candidate

Appendix B: Recruitment Email and Research Study Flyer

Hello,

I am Akinwale Obatayo, a Ph.D. student at the College of Health Sciences and Public Policy at Walden University in Minneapolis. I am conducting a study as part of my doctoral research, which is focused on Latent Tuberculosis Infection (LTBI) treatment hesitancy. The study is independent and not affiliated with any organization or program. I am interested in exploring your perspectives on the factors that hinder seeking LTBI treatments and the factors that contribute to non-adherence with LTBI treatments.

I am looking for African immigrants who live in the United States, are at least 18 years old, and can read and speak English language. I am specifically looking for participants who have tested positive for tuberculin skin test or any other form of LTBI diagnosis and are willing to take part in the study. Please note that your identity will remain confidential, and your responses will be recorded and used solely for research purposes.

To participate in this study, you will receive a consent form that outlines your rights as a participant. You must sign this form before the interview. You will also need to complete a short demographic questionnaire. The interviews will take place online via Zoom or Microsoft Teams video conferencing. Please note that I will require the signed consent form before conducting the interview.

The interview will last no longer than 60 minutes. You will be asked open-ended questions about your views, thoughts, and opinions on LTBI treatment hesitancy in a semi structured format. It is entirely up to you whether to participate or not, and you have the right and freedom to withdraw from the interview at any point.

If you are interested in participating in this study, please accept by emailing the researcher to schedule a day and time of interview. Additional questions or concerns may also be addressed by contacting my dissertation committee chair, Dr David Segal

I appreciate your consideration in participating in this study!

Thank you!

Research Study Flyer

Participate in Public Health Research Focusing on Latent Tuberculosis Infection Treatment Hesitancy.

Research study seeks African immigrants living in the United States

Latent tuberculosis infection (LTBI) is a critical public health concern in the United States, particularly among African immigrants who are predominantly affected by the disease. Despite the availability of preventive therapies, studies show that several African immigrants living in the United States are hesitant to accept or adhere to LTBI treatments. For this study you are invited to describe your perspectives and experiences towards LTBI treatment hesitancy. This research will provide insight into strategies that can help encourage timely treatment of latent tuberculosis infection, prevent active TB, and support the World Health Organization's efforts to eradicate TB globally.

About the Study:

- Your participation is voluntary, and you are free to exit at any time.
- The interview will take place via telephone/videoconference and will not exceed 60 minutes.
- You will be assigned a code name to protect your privacy.
- Your response will be recorded, referenced and you will receive a copy of the research findings.
- As compensation, you will receive a \$20 Amazon gift card.

Volunteers must meet these requirements:

- African Immigrants currently living in the United States.
- 18 years old or older.
- Have tested positive to Tuberculin skin test or any other LTBI diagnosis.
- Able to read and speak English language.
- Have access to Zoom or Microsoft Teams videoconferences.

This research is part of the doctoral study for Akinwale Obatayo, a Ph.D. student at Walden University. Audio recorded interviews will begin on 24 AUGUST 2023.

To learn more about the research and how to participate, email me at

xxxxxxx@waldenu.edu

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Appendix C: Interview Guide

Interview Guide

Perception of African Immigrants Living in the United States toward Latent Tuberculosis Infection Treatment Hesitancy

Introduction: Latent tuberculosis infection (LTBI) is a critical public health concern in the United States, particularly among African immigrants who are predominantly affected by the disease. Despite the availability of preventive therapies, studies show that several African immigrants living in the US are hesitant to accept or adhere to LTBI treatments. For this study you are invited to describe your perspectives and experiences towards LTBI treatment hesitancy.

The IRB approval number is 08-02-23-0294059. It expires on August 1, 2024

Thank you for agreeing to be a part of this research project. I am very interested in hearing your views, beliefs, and experiences. This research will provide insight into strategies that can help encourage timely treatment of latent tuberculosis infection, prevent active TB, and support the World Health Organization's efforts to eradicate TB globally.

The current research is guided by three main points:

- (a) limited knowledge on the perception of African immigrants living in the US on LTBI treatment hesitancy.
- (b) To explore the underlying reasons for hesitating available LTBI treatment
- (c) The need to encourage preventive medicine through education and prophylactic measures.

Research Questions:

RQ1: What are the perspectives of African immigrants living in the United States towards LTBI treatment hesitancy?

RQ2: What are the beliefs and attitudes of African immigrants living in the United States towards LTBI treatment acceptance and adherence?

Background/demographic:

1. Sex/Gender
2. Age (yrs.)
3. Educational status
4. Country of birth
5. Current state of resident