Knowledge And Perception Of Tuberculosis Among Opd Clients Assessing Care At Seventh-Day Adventist Hospital, Kwadaso.

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ABSTRACT

Globally, and particularly in Asia and Africa, one of the main causes of illness and problems with public health is tuberculosis (TB). Since 1993, WHO has regarded tuberculosis as an unchecked, infectious epidemic that is also a global health emergency. With a 5–10% latency rate in infected immune-competent persons, tuberculosis is a highly contagious but treatable disease. In contrast, prevalence has declined in developed countries. One of the most prevalent contagious illnesses, tuberculosis (TB) is brought on by mycobacteria, particularly Mycobacterium tuberculosis. The route of transmission for TB is via droplet nuclei, as well as a variety of risk variables that have regularly been identified. The major goal of this study was to measure OPD patients' knowledge about tuberculosis as they evaluated their care at Kwadaso Seventh-Day Adventist Hospital. At the Seventh-Day Adventist Hospital in Kwadaso, in Ghana's Ashanti Region, 300 adult OPD patients participated in a descriptive research. According to the study's findings, 18.4% of respondents selected "people living in close contact with TB" as a risk factor for TB, 31.4% selected "through airway" when a person with TB coughs or sneezes without covering their mouth or nose, this is considered the mechanism of transmission. 15% selected "persistent cough for more than 2 weeks" as a sign or symptom of TB, and 12.6% selected "getting early treatment whenever you have a suspicion of TB" as prevention and control of TB when sneezing or coughing, cover mouth and nose by 12.4%, and 12.2 percent added avoiding close contact with TB-infected people. Public health screenings for the condition ought to be promoted. For a deeper comprehension of TB education, TB education should be intensified and made more understandable to rural people utilizing their native dialects.

CHAPTER ONE

INTRODUCTION

1.1 Background of study

TB is a significant source of illness and public health problems throughout the world, notably in Asia and Africa (WHO, 2008). The WHO has identified tuberculosis (TB) as a global health emergency since 1993 and as an uncontrolled, seriously contagious epidemic. Although highly contagious, mycobacterium tuberculosis is treatable and has a 5- to 10-percent latency period in infected immune-competent people. Despite the fact that prevalence has declined in industrialized nations like West Europe, North America, and Japan, it still has a significant detrimental effect on health in tropical and underdeveloped nations. (1999; Dye et al).

A total of 10 million new cases of TB are expected to be reported in 2019, with 5.6 million of those cases expected to be in men, 3.2 million in women, and 1.2 million in children. 10% of the population were HIV positive individuals. On the earth, an estimated one-third of people have TB bacillus infection. (WHO, 2020). The continent with the second-highest percentage of new TB infections in 2015 was Asia (61%) followed by Africa (26%) and typically affects people in their productive years (WHO, 2020). For a long period, tuberculosis (TB) was the biggest cause of death from a single illness, however, because of the emergence of Coronavirus 2 and the severe acute respiratory syndrome (SARS-CoV-2), it is now the second leading cause of fatalities globally (WHO, 2020). Around 72% of TB patients in 2017 came from Africa, with two thirds coming from the following eight nations: India (27%) China (9%) Indonesia (8%) Philippines (6%) Pakistan (5%) Nigeria (4%) Bangladesh (4%) and South Africa (3%) (WHO, 2020). 87 percent of the cases worldwide were located in these eight countries and the remaining 22 countries on the WHO's list of 30 high TB burden countries. Notably, just 3% of all TB cases worldwide were recorded from Europe and the Americas combined. This demonstrates how national pandemic intensity varies greatly between nations. Less than 10 new cases per 100,000 individuals were reported in the most of the high-income countries in 2017, 150 to 400 in the majority of the 30 countries with the highest TB prevalence, and more than 500 in countries like Mozambique, the Philippines, and South Africa (WHO, 2020). Approximately 72% of TB

cases in 2017 came from Africa, with two thirds originating from the following eight countries: India (27%), China (9%) Indonesia (8%) Philippines (8%), and Indonesia (9%) (6 percent) Pakistan (5%), Nigeria (4%) Bangladesh (4%) and South Africa (3%) are the leading three nations (WHO, 2020). These eight countries, along with the other 22 countries on the 87 percent of all cases worldwide were reported by the WHO's list of 30 countries with a high TB burden. Notably, just 3% of all TB cases recorded worldwide were from Europe and the Americas combined. This illustrates how serious national pandemics may differs substantially between countries. 2017 saw fewer than 10 new cases per 100,000 people were recorded in the majority of wealthy nations, most of the 30 countries range from 150 to 400. with the greatest TB burden, and more than 500 in countries such as Mozambique and the Philippines. In South Africa, TB remains the second biggest cause of mortality after SARS-CoV-2. In 2019, 58,000 people died from tuberculosis, with HIV accounting for 36,000 of those fatalities (WHO, 2020). The severe HIV pandemic is a considerable contributor to the TB burden in South Africa. One of the most severely impacted provinces is Limpopo by tuberculosis, with HIV co-infection affecting around 55% of TB patients. In comparison to the 70 percent of HIV-positive children under 15, only 76% of adults are aware of their status (NDH, 2017). Nearly 75 percent of TB patients in some parts of Africa are also HIV positive (WHO, 2018). A higher risk of TB exists in HIV-positive people than in HIV-negative people. The province of Limpopo had the most patients, according to Health System Trust with 96.7 percent of patients obtaining TB treatment in 2016. The province's treatment cure rate was 76.1 percent, which was lower than the national objective of 85 percent (HST, 2017), while the province's default rate for TB therapy was 6.1 percent higher than the common nationwide of 5.4 percent. Success rates for treating TB were 80.6 percent, falling short of the national aim of 85 percent, while TB mortality rates were 11.5 percent, in excess of the national average of 5% (HST, 2017). In TB patients, a lack of awareness of the disease correlates to underuse of medical services, delayed diagnosis and poor adherence to treatment. Improving the distribution of TB public awareness and health promotion is crucial to boosting TB awareness. In turn, this influences how the public and TB patients seek medical attention (Mbuthia et al., 2018). Numerous studies have found that a on-adherence to medication is frequently related to a patient's lack of knowledge about their illness and how to manage it. (Fernandez at el., 2019). A general understanding of TB exists, however there are knowledge gaps regarding transmission, treatment, and

prevention. For those who have TB, this causes delays in diagnosis and treatment (Mondal at el., 2015). A different study found that patients who know little about tuberculosis less inclined to seek out medical treatment and find a diagnosis. Instead, people frequently turn to traditional healers and self-medication, resulting in delays in diagnosis and proper treatment (Mbuthia et al., 2018). Additionally, it has been noted that in Africa, community members frequently have incomplete information regarding the origin and spread of TB (Tollasa, 2014). A lack of awareness about tuberculosis and its treatment contributes to poor adherence to TB therapy (Tola et al., 2015). Non-adherence to the specified course of therapy causes TB that is not treated, TB spreading throughout communities and an increase in medication resistance. It is usual for TB to be resistant to at least one first-line anti-TB therapy in people with drug-resistant TB. If the patient disregards their treatment plan, they could develop multidrug-resistant tuberculosis (MDRTB). Drug-resistant TB requires continuous supervision and advice from medical professionals (CDC, 2020). Patient non-adherence to TB therapy is common, according to the WHO, which leads to high death rates, the spread of drug-resistant TB, and escalating treatment costs. The WHO introduced DOTS to the world in an effort to guarantee that all TB patients adhere to treatment, with the goal of increasing cure rates (WHO, 2017).

In 2016, 10.4 million cases of TB were diagnosed, including 600,000 instances of multi-drug resistant TB, according to the World Health Organization (WHO). (WHO, 2018) . While TB is being well controlled in high-income nations, it still affects people in low-income and lower-middle-income economies (Castro and LoBue, 2011).

In the underdeveloped world, tuberculosis kills 25% more adults than malaria, diarrhea, or immunologic deficiency syndrome combined (AIDS). According to Raviglione and Obrien (2004), One of the most prevalent infectious diseases, tuberculosis (TB), is primarily caused by the mycobacterium tuberculosis. Mycobacterium tuberculosis (MTB), an aerobic-pathogenic bacteria that causes pulmonary illness, is believed to afflict one-third of all people on the planet. Seven different species of mycobacterium make up the mycobacterium TB complex: M. tuberculosis, M. bovis, M. africanum, M. microti, M. canetti, M. caprae, and M. pinipedi. M. tuberculosis is the most common cause of TB in humans, with M. bovis and M. africanum accounting for very few occurrences (LoBue et al, 2010). Mycobacterium species can be found in the genus Mycobacterium, the family Mycobacteriaceae, and the order Actinomycetales. Mycobacterium has

around 70 species, but only two are recognized to be major human pathogens: Mycobacterium leprae and Mycobacterium TB (Koch, 1882). (Hansen, 1874). Lung tissue damage caused by Mycobacterium tuberculosis can result in a patient's impairment or death if untreated. In developing nations, TB treatment is seen as a cost-effective healthcare intervention (World Bank, 1993). TB is a significant public health issue with socioeconomic effects, particularly in Ghana. The lowering of TB mortality and morbidity depends on public awareness. It is generally known that early TB diagnosis and detection can lower TB incidence and mortality rates. TB is a disease that causes social rejection since it is stigmatized by the community. According to a WHO study issued in 2008, In 2006, there were 9.2 million new cases and 1.7 million fatalities due to tuberculosis globally. HIV-positive people were responsible for a total of 0.7 million illnesses and 0.2 million fatalities. According to the WHO's 2006 global TB assessment, Ghana has the thirteenth (13th) highest predicted yearly number of new TB cases in Africa. TB infection is more likely among the almost TB is the primary killer of HIV-positive individuals, who number 1.4 million. Active tuberculosis is 20-40 times more prevalent in patients with HIV who already have TB (WHO, 2010). According to WHO surveillance and survey statistics, 9.27 million new TB cases were reported in 2007 (139 per 100,000 people), an increase from 9.24 million new cases (140 per 100,000 people) in 2006. There were 9.27 million new cases identified, with 4.1 million (61 per 100,000 population), or around 44 percent, having smear- and culture-positive samples (WHO, 2009). Surgery was a regular and frequently life-saving method of tuberculosis treatment before antibiotics were discovered to be effective against the disease. Scottish doctor Dr. James Carson discovered that surgery helped people live longer in 1821 pleural effusion from the region surrounding the lungs is first drained before treatment is begun. Numerous methods emerged, but they lost their effectiveness after the development of anti-tubercular medications. Following the discovery of streptomycin in 1944, antibiotics were initially applied to the treatment of tuberculosis. Antibiotic resistance, which is still a serious issue, was caused by the use of this agent alone. Better results were obtained as a result of the invention of PAS (para-aminosalicylic acid), an oral medication that is not streptomycin. After that, more efficient medications like INH (isoniazid) and rifampicin treatment became available in the 1950s. Less than 20 medicines are active against mycobacterium at the moment. After the development of anti-tubercular medications, other strategies arose but were unsuccessful. In 1944, with the discovery of

streptomycin, antibiotics were employed for the first time to treat tuberculosis. Antibiotic resistance was caused by the sole use of this substance, and it is still a serious issue. Para-aminosalicylic acid (PAS), an oral medication unlike streptomycin, was developed and brought about better outcomes. Later, more efficient medications like INH (isoniazid) and rifampicin therapy were introduced. There are currently fewer than 20 medicines that are active against mycobacterium. A third of the world's population has been exposed to the bacteria and is affected, despite the development of sophisticated screening, diagnostic, and therapeutic methods for the illness. More over 90% of the world's population resides in developing nations.

As HIV spreads, TB has seen a huge recovery, with over 8,000,000 new cases nearly 2 million individuals die from it each year. The nineteenth century saw the nickname "the commander of all men of death" given to tuberculosis. It still remains true in significant part presently.

However, there is a dearth of understanding about TB and attitudes toward treatment in the primary care context. When starting TB drugs, primary care physicians and other medical professionals are required to give pertinent health education. Before starting their treatment, TB patients are typically educated according to a checklist. Making ensuring that people comprehend the disease, treatments, and side effects of pharmaceuticals is the goal of this education. Therefore, the researchers sought to ascertain the degree of treatment-related knowledge and perception among clients visiting the OPD at the Seventh-day Adventist Hospital, Kwadaso.

1.2 Problem statement

One of the leading causes of mortality and morbidity in underdeveloped nations is tuberculosis (TB), constituting around 25% of all fatalities that could have been prevented (WHO, 2006). By 2005, there were 11.9 million instances of this disease worldwide, up from 8.8 million in 1995. (Pilheu, 1998). 9,4 million more cases were reported in 2008 of tuberculosis were reported, with 1.3 million deaths. (World Health Organization, 2009). Every year, there are around 8 million new TB diagnoses. with 2 to 3 million people dying as a result of the disease (WHO report, 2002). One person contracts tuberculosis every second, and

every 10 seconds, one person dies from it (Lonnroth and Raviglione, 2008; WHO, 2008). Each patient has a 10- to 15-person infection cycle (Lallo and Pillay, 2008). As a result, tuberculosis world health is still seriously threatened. In 2000, the World Health Organization (WHO) recognized it as an emerging ailment that needed to be managed on a worldwide scale (Mandell et al., 2005; WHO TB report, 2000).

According to a 2013 survey on the prevalence of tuberculosis (TB), Ghana's TB burden is three times greater than what the WHO predicted. Prior to the survey, WHO estimates indicated that there were fewer than 92 cases of TB in Ghana per 100,000 people (0.092 percent), but the nationwide survey revealed that there were 286 cases per 100,000 people, or 0.286 percent, of the population (WHO TB report, 2013). Ghana reported 165 new cases of tuberculosis per 100,000 persons in 2014. Despite a decrease in cases in 2014, 44,524 new cases were reported in 2015 (2.188 percent), increasing Ghana's TB burden (World Health Organization report, 2014).

If improved information and attitudes toward the diseases are prioritized, tuberculosis control can be considerably improved. Lack of awareness regarding the condition, its transmission method, and preventative methods of TB may have an impact on patients' health-seeking behavior as well as the effectiveness of control measures, which may contribute to high transmission rates and noncompliance with treatment (Jaramillo et al., 2000). Increasing people's knowledge and positive attitudes will minimize the spread of disease, improve health, and save lives.

1.3 Main objective

To determine the knowledge and perception on TB among OPD clients assessing care at Seventh-day Adventist Hospital, Kwadaso.

1.3.1 Specific objectives

1. To determine respondents' knowledge on the risk factors of TB.
2. To identify respondents' knowledge on the mode of transmission of TB.
3. To explore respondents' knowledge on the signs and symptoms of TB.
4. To determine respondents' knowledge on the prevention and control of TB.
5. To identify respondents' knowledge on the perceptions of TB.

1.4 Research questions

1. What knowledge do clients have on the risk factors of TB?

2. What knowledge do clients have on the mode of transmission of TB?

3. What knowledge do clients have on the signs and symptoms of TB?

4. What knowledge do clients have on the prevention and control of TB?

5. what knowledge do clients have on the perception of TB?

1.5 Justification of study

Ghana is seeing an increase in tuberculosis prevalence despite improvements in the use of Directly Observed Therapy Short Course (DOTS) in control efforts. Since tuberculosis is a treatable illness that nevertheless kills and causes pain in thousands of people worldwide, it continues to be important for public health. Following the prescribed course of treatment is necessary for effective tuberculosis treatment. Directly Observed Therapy (DOTS) is advised in order to boost the rate of cure and adherence. Directly Observed Therapy (DOTS)-based tuberculosis care is offered to people all around the world, there has been an increase in tuberculosis prevention services in several nations (WHO, 2007). This study will help those whose chance of developing TB is high infection learn more about the disease, including the symptoms, how it spreads from person to person, how to prevent it, and when to go to the hospital for treatment. Low case detection of pulmonary TB has been and continues to be a significant issue for Ghana's national TB program. As a result, the purpose of this study is to evaluate the level of knowledge among Kwadaso Seventh-day Adventist Hospital OPD (Out of Patient Department) patients.

1.6 Definition of terms

1**. Drug-resistant TB** – TB caused by bacteria that can grow more than once when exposed to a particular medication and is resistant to at least one first-line antituberculosis treatment.

2. **Extensively drug resistant TB (XDR TB)** – An unusual form of MDR TB that is resistant to all fluoroquinolones, all three injectable second-line drugs, and both isoniazid and rifampin (i.e., amikacin, kanamycin, or capreomycin).

3. **Interferon-gamma release assay (IGRA)** – a specific kind of blood examination that gauges an individual's immunological response to M. tuberculosis IGRAs that are now offered in the United States include QuantiFERON®-TB Gold and QuantiFERON®-TB Gold In-Tube.

4. **Mantoux tuberculin skin test (TST)** – The reaction to this test, which is often a tiny swelled region (induration), based on the severity of the reaction and the patient's TB risk factors, is evaluated 48 to 72 hours after the injection and is interpreted as positive or negative. This method of testing for tuberculosis infection is injecting 0.1 ml of liquid tuberculin with 5 tuberculin units between the layers of skin (intradermal), typically on the forearm.

5. **Multidrug-resistant TB (MDR TB)** – Being resistant to at least rifampin and isoniazid makes MDR TB more challenging to treat than drug-susceptible TB.

6. **Secondary drug-resistant TB** – also known as acquired drug-resistant tuberculosis, this condition occurs during TB therapy either as a result of the patient not receiving the proper care or because the patient did not adhere to the recommended treatment plan.

1.7 Structure of thesis

This thesis, which is divided into six chapters, is intended to serve as a record of OPD patients' knowledge about and attitudes toward tuberculosis as they evaluate their care at Kwadaso Seventh-day Adventist Hospital. The introduction is covered in the first chapter. The study's setting, problem statement, research questions, objectives, conceptual framework that the inquiry fit into, and study's significance are all clearly explained in this paragraph. This is supposed to serve as the introduction to the entire research.

The second chapter examines the evaluation of the literature and provides a summary of some of the similar research initiatives that other scientists have carried out. Philosophies that are pertinent and relevant are well cited in this chapter. The hypotheses that underlie some of the current studies are also discussed in this chapter. Additionally, it emphasized some of the shortcomings of prior studies, emphasizing the necessity of looking at the most recent findings.

The research design and methodologies are covered in the third chapter. Here, the research's philosophical underpinnings and study design are thoroughly explained. The methods used to choose the study subjects and get the data are also covered in this chapter. It also considers the tools, data analysis, and data presentation processes. This chapter also covers the research's ethical considerations.

The findings from the data that was gathered are covered in the fourth chapter. When necessary, the findings are shown in tabular format. It provides the data in line with the objectives and research questions of the study.

The fifth chapter is concerned with discussing the results from the preceding chapter. It explores and ties essential ideas to the findings of the investigation. In addition, this chapter offers a thorough explanation in response to the chosen subject and goals. Here, we also analyze all conceivable causes for the various connections and the most likely covariate relationships. It exposes both the advantages and the drawbacks of the existing research. A few areas have received recommendations for future research.

The sixth and final chapter discusses broad conclusions and suggestions. You may see a summary of the research results as well as recommendations for potential future research topics from the perspective of the primary investigator here. The document's references and appendix are located towards the end.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature on TB knowledge and perceptions is reviewed in-depth in this chapter. It is important to note that Ghanaian TB understanding and perception research is typically insufficient. It evaluates pertinent research from both developed and developing nations, with a focus on findings and methodological issues specific to developing nations. In relation to the topic, a search was made in published articles. Knowledge and attitudes towards TB are some of the subjects being researched. The references that the automated search produced were also used in a search.

2.2 Historical Background of Tuberculosis

TB was deemed a "Global Emergency". In a speech given in 1993, Dr. Kochi, the director of the WHO Tuberculosis Program, underlined that TB was the biggest killer of people and that it was out of control in many regions of the world. How was such a development feasible given all the scientific advancements? Beginning in the early to mid-19th century, prevalence and death rates in Europe and North America started to decline, coinciding with advances in TB knowledge. As reasons for the decline, better food, improved social and living circumstances, and the construction of sanatoria have been offered. It has also been suggested that herd immunity, which develops naturally via selection of a more resilient population, may have had some impact. (Daniel, 2006; Lönnroth et al., 2009). Funding and interest in tuberculosis research and control drastically decreased as the disease was no longer seen as a threat to wealthy countries. Knowledge loss, clinical skill loss, and the collapse of the TB control management infrastructure were caused by the loss of money and interest in the fight against tuberculosis. (Ogden et al., 2003). If sufficient finances had been available, most likely, the discovery of the BCG vaccination and the creation of efficient therapy regimens would have had a much greater influence on TB control in developing nations. The developed world was where the opportunities made possible by medical discoveries were first put into practice. Only a few other countries were able to successfully implement positive results from industrialized nations using

the same methodologies. Infrastructure for delivering services may be lacking in the poorest nations, where the bulk of instances were found to be. Populations were dispersed, and communication was insufficient to provide surveillance and access to accessible medical care. Additionally, the disease burden could not be managed with the available fiscal means (Enarson, 2000). There were other issues that made it difficult to manage TB in the underdeveloped countries. The treatment of tuberculosis with isoniazid alone was one of the initial treatments in low-income nations in the 1960s. It was inexpensive, provided positive results, was simple to use, and had the support of both the WHO Director General and the IUATLD Executive Director. The current issue of multi-drug resistance was made possible by this tactic, which also helped the spread of isoniazid resistance (Enarson, 2000). Based on the significance of active case findings, a different approach was developed. The idea was that reducing disease burden would be accomplished more effectively by a low level of treatment success in a large number of cases than by a high level of treatment success in a few select cases.

In response to WHO instructions, the majority of administrations in developed the national tuberculosis control programs. Following the suggested strategy for a few years, the WHO received reports of millions of cases of tuberculosis. According to frequent surveys from East Asian nations, patients that were being treated but not cured accounted for more than half of the sources of TB transmission. The majority of these situations also saw the emergence of resistant strains. The approach had failed, and ineffective care had exacerbated the epidemiological problem more than if the patients had not gotten therapy (Enarson, 2000).

In the United Kingdom in 2013, 44% of TB patients were jobless, and 70% of cases were from the 40% of regions with the poorest economic situations. 3 According to Story et al. (2007), complex health and social risks such as homelessness, incarceration, high rates of alcohol and drug abuse, HIV, a recent history of migration from countries with a high disease burden, and lack of eligibility for welfare are present in groups that are frequently deemed difficult-to-reach or underserved in low incidence countries. All of these variables may affect how well people receive therapy and their access to it, and they pose significant difficulties for agencies that might not have the funding to reach out to disadvantaged populations.

In response to these specific difficulties, the World Health Organization (WHO) and the European Respiratory Society (ERS) devised a framework of eight priority measures for the eradication of tuberculosis

(TB) in countries with low incidence (or approaching low incidence) in 2014. These actions include ensuring political commitment, addressing the needs of vulnerable and hard-to-reach groups and migrants (including actions to reduce stigma), targeted screening and education campaigns for both, improved case management, support for international TB preventive initiatives, care and control, drug-resistant TB action, funding for research, active and latent illness in high-risk groups, and care and control. The notion explains why it will be difficult to reduce the incidence of tuberculosis (TB) from more than 1000 cases per million people to less than 100 cases per million by 2035. . All but six of the 33 countries have seen their economies fall at an average pace of about 3% during the past 12 years.

2.3 Theoretical Review

2.3.1 Causes and mode of transmission of tuberculosis.

Mycobacteria, particularly Mycobacterium tuberculosis, are tiny microorganisms that cause the chronic and contagious bacterial illness tuberculosis (TB) (Raviglione and Obrien, 2004). Despite the fact that TB can infect any part of the body, the majority of cases involve the lungs, making this the most contagious and contagious type of the illness. TB is treatable and avoidable. TB comes in two varieties: latent and active. Latent TB refers to individuals who have contracted the TB germs but are not (yet) unwell and cannot spread the illness to others. A third of people on the planet have latent tuberculosis.

When a person has contracted the TB bacteria and is considered to have active TB if they are exhibiting TB symptoms. People who have active pulmonary TB and produce a lot of sputum have the risk of spreading TB virtually constantly. TB is one of the most commonly spread respiratory infections because the organisms can linger in the air for hours or days. The lungs are primarily impacted by about 80% of all tuberculosis cases. However, it can also have an impact on other bodily systems, such as the circulatory and skeletal (Dodor, 2004).

A person with active tuberculosiscan, in the shortest time, infect ten to fifteen (10 - 15) healthy individuals if they do not receive good treatment because the condition is chronic and requires long-term care. Through the air, TB can transmit from one person to another. Tiny particles carrying Mycobacterium tuberculosis (M.

tuberculosis) when someone who has contagious TB disease (TB that may be transferred) coughs, sneezes, speaks, or sings, the disease may be spread through the air. These tiny spheres, also known as droplet nuclei, are less than 1/5000 of an inch in size and range in size from 1 to 5 microns. Droplet nuclei may linger in the atmosphere for a number of hours depending on the situation. Transmission may take place if a different person inhales air that has these droplet nuclei in it. But not everyone who comes into contact with a patient with TB infection contracts Mycoacterium tuberculosis. The risk of contracting M. tuberculosis is higher among close contacts of TB patients. They could be friends, coworkers, family members, or other people.

The management and prevention of TB patients are impacted by the notion that TB infection is brought on by spiritual forces, witchcraft, dough during sex, or other paranormal events. There have been reports of similar local TB beliefs in other nations. In the Philippines, people believed that having weak lungs caused TB (Nichter, 1994). According to Mogensen (1997), the Tonga people of Zambia have a variant of TB known as "kahungo" it is supposedly catchable through sex with a lady who has recently had a miscarriage. It was thought that this illness resembled HIV infection. In Malawi, it has been discovered that linking tuberculosis to HIV and AIDS prevents people from seeking medical attention out of concern that they would be given an HIV diagnosis (Woolf et al., 2006), an observation that can hinder case discovery. TB was once believed to be brought on by post-spontaneous abortions for women and violating cultural taboos around having sex after losing a family member. (Edginton et al., 2002).

An investigation was out in Morocco claims that individuals believed that having too much water in the abdomen caused TB (Ottmani et al., 2008). In the Nalgonda district of South India, locals were found to believe that TB was brought on by supernatural causes like a transgression of the gods, a divine punishment, witchcraft, the evil eye, fate, an imbalance in the body's hot and cold qualities, and bad blood, according to research (Venkatraju and Prasad, 2010). Due to these prevalent ideas, those who suffer from the ailment frequently turn to traditional and spiritual healers, who may not be qualified to handle their particular case. Untreated patients serve as infection reservoirs for the community's susceptible members. Early detection and treatment of the sick person are required to be able to break the cycle of transmission.

This study's conclusion that lifestyle choices like alcohol consumption may contribute to TB is not unique. In Kenya, it was thought that unhealthy lifestyles, consumption of indigenous alcoholic beverages, smoking,

sharing facilities with TB patients, and inheritance were the main causes of TB (Liefooghe et al., 1997). However, this study showed that, contrary to what was stated in Kenya, the connection between alcohol usage and TB is spiritual and not causal. Alcohol abuse was attributed to a curse for living a promiscuous lifestyle or having sexual relations with someone's partner. This was a requirement for the condition to cause a cough during sexual activity (Tabong et al., 2021).

2.3.2 Risk Factors

With a roughly two-fold greater chance of infection and development to active TB, smoking and advanced age are significant risk factors (Donald et al., 2010; Bates et al., 2007). Heavy alcohol use, end-stage renal failure, and cancers are other risk factors (Lonnroth, 2008; Hussein, 2003). Diabetes is three times more likely to cause tuberculosis than it is, and in 2000, it was responsible for 20% of smear-positive TB infections in India (Stevenson et al, 2007). While the danger of developing tuberculosis has traditionally been linked to immunosuppressive medications like corticosteroids, the disease is now becoming more prevalent in affluent nations when tumor necrosis factor (TNF) antagonists are used to treat rheumatological problems (Wallis RS, 2008). Human cases of bovine TB have also been linked to consuming unpasteurized milk (Cataldi et al., 2007; Ofukwu, 2008). These circumstances are typical in Ghana's three Northern Regions, where unpasteurized milk is used to produce regional dishes such borkina, fula, and nunu (Ofukwu, 2008). These regional foods are spreading across the country.

For people who have been exposed to the TB germs, the lifetime risk of developing TB is 10%. However, those whose immune systems are compromised, such as those who have HIV, are undernourished, or have diabetes, or tobacco use, are considerably more likely to become ill. Most people who have tuberculosis are in the peak of their careers. But there is risk for people of all ages. More than 95% of incidence and deaths occur in developing countries.

2.3.3 Signs and Symptoms

From person to person, this differs. In latent TB, the ability of the body to fight against microorganisms and stop their growth, resulting in the absence of any TB symptoms and the inability to transmit the disease to

others. In Ghana, the National Tuberculosis Control Programme (NTCPDr.)'s Bonsu (2006) notes that symptoms of TB include fever, night sweats, tiredness, weight loss, and a persistent cough that lasts longer than two weeks. Early on in the illness, these symptoms are not very distinct and sometimes confused with other upper respiratory diseases like the common cold or malaria. This varies from one person to the next. In latent TB, the body is able to fight off the germs and stop them from growing, which leaves no TB symptoms and renders the patient incapable of spreading the disease to others. Patients of both sexes present for a median of two (2) months, ranging from four (4) days to three (3) years in length (Eastwood and Hill, 2004). Some signs of active TB disease include coughing up blood or phlegm stained with blood, chest pain that interferes with breathing or coughing, and a cough that lasts for two weeks or more. Weakness or weariness, unexplained weight loss, appetite loss, chills, a low-grade fever, or night sweats are some more symptoms.

2.3.4 Management

We must see the illness in the perspective of its historical development in order to comprehend how TB is currently managed. Since ancient times, TB has been a problem for cultures. It is believed that Mycobacterium tuberculosis (M. tuberculosis), the bacteria that causes TB, has been responsible for the most fatalities of any microbiological pathogen.

Two objectives were set for national TB control programs by delegates to the World Health Assembly in 1991: to identify sputum smear-positive patients at least 70% of the time each year, and to cure them at least 85% of the time (Dye et al., 2007). The WHO's TB prevention program was updated in the early 1990s to include crucial techniques for diagnosing and treating TB; DOTS was then used as the primary tool to achieve these goals. One of the biggest difficulties in controlling TB was thought to be treatment discontinuation.

It was determined to prioritize the control of each patient taking their prescribed daily dose of medication in order to stop the continued development of resistance against anti-TB treatments, particularly rifampicin. The WHO then created a comprehensive plan that was focused on directly monitored therapy (Lienhardt and Ogden, 2004). DOTS, which still ranks as the top TB control method globally, focuses on five key areas, including:

1. Consistent financial and political support;

2. Case detection through passive case finding using high-quality sputum-smear microscopy;

3. Standardized short-course anti-TB treatment administered under close supervision;

4. Securing a consistent, unhindered supply of high-quality anti-TB medications; and

5. Standardizing recording and reporting (The World Health Organization, 2009; Sagbakken, 2010).

Sputum culture with diagnostic sensitivity testing (DST) if the culture shows growth is the standard of therapy for TB patients in well-resourced settings as opposed to the global practice of sputum smear microscopy (SMM) (WHO Global Tuberculosis Control, 2008). Microscopy is still constrained, nevertheless, by its low sensitivity (on average 50 percent of culture-positive samples are smear positive). SMM is also limited by the inability to diagnose pediatric tuberculosis and the lack of DST capacity (Steingart et al., 2006). New techniques that can improve the yield and accuracy of smear microscopy have been investigated due to the difficulties with smear microscopy (Mase et al., 2007; Steingart et al., 2006). These include the use of sputum processing techniques, light-emitting diode (LED)-based fluorescence microscopy, and specimen collection strategies that are optimized for same-day diagnosis (Cambanis et al., 2006). In comparison to solid medium, meta-analyses have revealed that liquid culture techniques are more sensitive for detecting mycobacteria and may enhance the case yield by 10%. (Cruciani et al., 2004). Due to their 10 percent higher productivity and very quick turnaround times compared to solid medium, automated liquid culture techniques are the industry standard for detecting tuberculosis. (Dinnes et al., 2007).

According to Somosközi et al. (2000), the BACTEC MGIT 960 liquid culture system from Becton Dickinson can identify mycobacteria in clinical specimens on average two weeks following inoculation. The WHO endorsed the nitrate reducate assay and microscopically observed drug susceptibility (MODS) in 2009 as two reasonably priced non-commercial culture and DST techniques that can be used as a short-term solution in environments with limited resources. (Pai et al., 2009; WHO, 2009). The WHO has recommended employing liquid culture techniques and LED fluorescence microscopy in non-developed and developing countries in addition to antigen-based species confirmation for diagnosis and drug susceptibility testing (DST). (WHO, 2008). As part of a four-drug initial phase of tuberculosis treatment, rifampicin, isoniazid,

pyrazinamide, and ethambutol must be taken for two months, followed by a two-drug continuing phase (4 months of rifampicin and isoniazid, or 6 months of ethambutol and isoniazid).

2.3.5 Prevention and Control of TB

The patient's participation and compliance are thus required for the treatment to be successful. In reality, developing effective treatment plans would require knowledge of the variables affecting treatment non-compliance. Stopping the spread of TB from one person to another is the first step in TB prevention. This is accomplished by first identifying those who have active TB, then treating them with medication until they are cured. A person with TB will no longer be contagious after receiving the appropriate treatment, making it impossible for them to spread the disease. Keeping latent TB from becoming active and contagious is the second major goal of TB prevention. In the 1920s, the first version of the Bacillus Calmette-Guerin (BCG) vaccine was developed. One of the most frequently used vaccines now on the market, it is administered to more than 80% of all newborns and babies in countries where it is a mandated part of the national childhood immunization program.

There are various components to global TB prevention. The WHO advises taking the medicine isoniazid daily for at least six months and ideally nine months to prevent TB. The following actions should be taken to minimize exposure in families where someone has infectious TB, whenever possible: Home ventilation should be adequate, and everyone who sneezes or coughs should be taught proper coughing technique and respiratory hygiene, which includes covering the nose and mouth with an upper sleeve, elbow, or tissue when coughing or sneezing. An infected person is segregated into a solitary room in a hospital setting until they have gotten the necessary care for two weeks. All masks need to be properly adjusted.

2.3.6 Perception of TB

As many as 27 people had good perceptions of the disease TB (54 percent). According to Dwipayanti (2014), when patients with low educational backgrounds have an impact on diabetes patients' capacity to manage information, it results in disease. This study supports that claim. Patient perceptions and self-care practices related to tuberculosis 295 patients perceive the consequences of inappropriate behavior based on Leventhal

Theory. The findings also revealed that patients with tuberculosis exhibited self-care behaviors in which half of the respondents acted worse than 25 individuals (50 percent) and a small proportion of them behaved well enough to satisfy 7 persons (14 percent). Researchers have found that an individual's work and degree of education can have an impact on the importance of self-care behavior. These elements may also affect a person's capacity to understand how to manage information and to learn about their illness. Younger clients have better cognitive abilities than older clients, and they have a good understanding of self-care practices and its advantages in their daily life.

This contradicts Orem's (2001) assertion that age and ability will boost the effectiveness of self-care actions. growing older, relying less on self-care, and becoming more self-reliant in efforts to maintain health. Studies on self-care procedures (prevention of transmission, drug adherence, and nutrition). The occurrence of tuberculosis is not influenced by nutrition, but the condition is directly correlated with immune function. When the immune system deteriorates, tuberculosis is more easily transmitted; ideally, a healthy immune system will hasten the healing process and require less time (6 months). Increased nutrition is strongly advised and supports respondents' perceptions that healthy eating can have a beneficial effect on the healing process. Nurses play a vital role in altering the behavior of patients and families to attain balance and independence in self-care duties.

According to Tomey and Alligood (2010) and Orem (1971), everyone has the capacity to meet their basic needs on their own. Agents that can help clients take back their role as self-care providers are nurses. With the assistance of nurses who also act as educators and counselors, the patient's capacity to carry out self-care and follow medication regimens can be strengthened. Effective transmission control requires patient adherence to TB treatment. Treatment compliance is a complicated issue that affects the health care system. Treatment compliance is a difficult issue that encompasses the healthcare system, care delivery, professional behavior and the effectiveness of their communication with patients, community attitudes, and patient behavior. (Jakubowiak et al., 2008).

The key to complete disease management is for families with chronic conditions to practice advanced and self-care at home (Egwaga et al., 2009). Individuals who are capable of performing TB management behaviors and at-home care exhibit self-reliance and treatment compliance. The results of Lewis and Newell's

(2009) study show that patients with TB can feel more self-sufficient in their care and treatment by improving patient-provider communication, giving people more control over their lives, and making sure that patients are informed of and understand treatment plans. The implementation of the Adaptive Conservation Model, per the findings of the Kholifah et al. (2012) study, can boost pulmonary tuberculosis patients' knowledge among themselves and their families, raise support from families, organizations, and communities, and improve TB treatment compliance in the lungs (Amin and Hidayati, 2018).

2.4 Empirical Review

Globally, tuberculosis is a common and usually fatal airborne bacterial infectious illness that typically affects the lungs (pulmonary TB) but can affect any organ other than the pulmonary parenchyma (extra-pulmonary TB). It affects millions of people annually and is the second-leading infectious disease-related cause of death worldwide, after the human immunodeficiency virus (HIV). TB is estimated to affect one-third of the world's population, and tragically, this age group—which makes up the majority of cases—is also the most productive. Because this group makes a significant contribution to the workforce, it has a negative impact on the economy. In 2011, there were an estimated 9 million new cases of TB and 1.4 million deaths from the disease, of which 990,000 were caused by HIV and 430,000 by non-HIV causes.

2.4.1 Knowledge on the Risk Factors of Tuberculosis

The highest frequency of the following recognized TB risk factors was found in a cross-sectional study of TB patients getting treatment in Kampala, Uganda: HIV infection (41.4%), alcohol consumption (50.7%), poverty (39.5%), smoking (26.3%), family history of TB (17.5%), TB contact (11.5%), and diabetes (5.4%). There is a significant incidence of HIV among TB patients due to HIV-associated immune suppression, which increases the risk of TB through the reactivation of latent TB disease and a higher proportion of people who progress from TB infection to disease. In HIV-positive individuals, the annual risk of TB is 10%, compared to a 10% danger over time for people without HIV (Cole and Cook, 1998).

Approximately 6 times as many people in this study had HIV as did the overall population (41.4 vs. 7.3). However, compared to earlier reports, the prevalence is decreasing by over 50%. (Global TB control report, 2012). The short sample size and few recruitment sites may be the reason of this disparity. In contrast to the current study, Lukoye et al (2013), an analysis of the HIV prevalence revealed a reduced MDR-TB prevalence. of 30.5 percent.

The link between cigarette use and tuberculosis is well known (Gambhir, 2010; Basu, 2011; Ryan, 2012). The prevalence found in this study is different from that found in other studies conducted in Africa, but not statistically different from that seen in other locations (Wang and Shen, 2009). For instance, a research in Malaysia indicated a prevalence of 40.3% whereas one in South Africa claimed a prevalence of 21.8%. Prior research has identified overcrowding as a significant TB risk.

In this study, 57.3 percent of the individuals were found to be living in congested areas. For the nation, this is higher than normal. The prevalence of TB in the community was not factored into the national statistics. The country's highest TB prevalence is seen in the study area (Kampala). Kampala accounts for one out of every four TB cases reported in Uganda. Therefore, compared to locations where the prevalence of TB was significantly lower, overcrowding may pose a higher risk of the disease. Close touch was another element for TB that was clearly explained. In Malawi, it a projected that 9 to 13 percent of TB cases resulted from close contact.

According to a study on tuberculosis knowledge and awareness among patients with lung tuberculosis in a rural West Bengal region, 19% of participants believe that the main factors contributing to TB are smoking and chewing tobacco. Participants thought that nutritional deficiencies led to TB in 17 percent of cases, followed by alcohol use (12 percent), exposure to cold temperatures (9 percent), dust (8 percent), inadequate food (7 percent), bacteria/germs (6 percent), consume fresh milk (3 percent), bad luck (2 percent), and workload (17 percent) (2 percent). Moreover, 15% of the participants were unaware of the TB cause (D. and Jr., 2015).

2.4.2 Knowledge on the Mode of Transmission

In a research by Malhotra et al. (2002) on the awareness of tuberculosis in a population in the countryside of Delhi, 213 people were questioned. 95.3 percent were aware that tuberculosis might transmit to other people, with air being one of the possible routes for 65%.

In their descriptive assessment of the knowledge, attitudes, and behaviors of treatment partners for pediatric patients in Tarlac City, Christina et al., 61.3 percent of respondents believed that the usage of personal things like the patient's utensils spreads TB, whereas 85 percent of respondents believed that respiratory droplets from coughing are the main method of transmission.

384 patients in total, with an average age of 35.532 to (30.5-39.5) years were questioned as part of a study to determine the prevention of behavioral patterns among adult tuberculosis patients in Eastleigh division, Nairobi county, Kenya. When asked about the way that TB is spread, 166 (43.6 percent) of those surveyed were aware that tubercle bacteria can transfer and transmit TB to another person through the airways, coughing or sneezing while not covering the mouth and nose. Additionally, 199 (51.8%) of the patients were aware that TB cannot infect others who are around TB patients.

According to a study on students' knowledge of tuberculosis awareness conducted by a Saudi university, 14.0 percent of participants knew someone who has the disease. Cough-air (57 percent), polluted water or food (19 percent), Having sex with TB patients (18.6 percent), societal settings (11.6 percent), and hereditary (6.6 percent) were the reported mechanisms of TB spread, while 20.6 percent did not know.

85 percent of the 129 pupils in two high schools in Mysore city who participated in a cross-sectional study to gauge their understanding of tuberculosis and were chosen using cluster sampling said that it transmits from direct communication (Gopichandran et al., 2010).

An investigation into patients' understanding and awareness of tuberculosis found that with pulmonary tuberculosis in a rural setting of West Bengal, about the disease's route of transmission, 21% believed that contaminated food and water were the means of TB transmission. Also 21% was of the opinion that sharing drinking materials was the most typical means of transmission, followed by contact with patients (8%),

heredity (8%), drinking raw milk (11%), coughing, sneezing, and spreading (4%). (4 percent). However, 11% of respondents are unaware of the route of distribution (D. and Jr., 2015).

2.4.3 Knowledge on the Signs and Symptoms of Tuberculosis

A research on the awareness of tuberculosis among students at a Saudi university found that 44.9% of participants believed that a productive or protracted TB symptoms include cough, while 47.9% of participants thought coughing up blood was a symptom of TB. Other symptoms reported include weight loss (22%), night sweats (22%), and constipation (37%). (3.6 percent). TB symptoms include chest pain, fever, pallor, lack of appetite, diarrhea, itching, and impotence. according to 35.7 percent, 31.5 percent, 30.3 percent, 22 percent, 16 percent, and 14 percent of respondents, respectively. In regards to the a study conducted in Sabah, Malaysia, examined the signs and symptoms of tuberculosis, found that 91 (46.2%) and 73 (37.1%) out of 197 participants understood that hemoptysis and cough are both signs of the disease. Similar to the Chinese study, only 10453 (15.1%) of the 69253 individuals were aware that a persistent cough is a sign of tuberculosis.

In addition, a Rajasthan, India study revealed that 90 (23.9%) out of 376 individuals were aware that a sign of TB is chest pain (Yadav et al, 2006). However, in an alternative global internet survey with a 564-person sample, almost 49% indicated that the most common sign of TB was cough. (Corless et al., 2002). About a third were aware that TB and chest discomfort are related.

Patients' knowledge of and attitudes toward A mixed-methods research on TB from Vanuatu, a Pacific Island country In addition to a number of non-specific symptoms, participants mentioned a number of symptoms that are frequently linked to TB, including cough, fever, appetite loss, breathing difficulty, nocturnal sweats, and weight loss. The trio of signs indications that were most frequently mentioned were cough, fever, and weight loss.

In Punjab, urban and rural higher secondary school pupils, respectively, reported that the main symptoms were a cough, a fever, and weight loss at rates of 43.6%, 65%, and 81%. Less than half of the pupils reported experiencing chest discomfort and hemoptysis. According to a research conducted in Zambia among students

in senior secondary schools, 81.4% had heard of tuberculosis. Additionally, it stated that more than three-quarters of pupils were aware of the three main symptoms: persistent fever, cough, and weight loss.

In a research done in South Africa by Westaway (1990), tuberculosis patients were questioned. According to the study, the main symptoms were a cough, an appetite reduction, weight loss, and night sweats. The study came to the conclusion that patients' ability to live with the condition may be influenced by their denial of personal responsibility and their positive attitudes toward treatment and prevention.

The results of a cross-sectional study to ascertain the general Ethiopian population understanding, attitudes, and practices around TB revealed that 70.4 percent (2,585) of the respondents reported that coughing or sneezing was a means of transmitting TB. The majority of participants (85.5 percent (2,975)) reported having a cough, followed by chest pain (17.2 percent (596), fever (17.1 percent (593), and other signs (such as body swelling, night sweats, exhaustion, shortness of breath, appetite loss, weight loss, or blood in the sputum) (67.2 percent (2,340)). (Datiko et al., 2019).

According to a study on patients' understanding and awareness of tuberculosis with lung tuberculosis in a rural West Bengal region, 21% said that having a cough for two weeks or longer was a symptom of TB. However, 17 percent of respondents indicated that sputum containing blood was a TB symptom. Weight loss, a cough lasting two weeks or longer, and sputum containing blood were thought to be indicators of TB by 15% of participants, followed by a nocturnal temperature and sweating (14%), a cough lasting two weeks or longer, and sputum containing blood. (6 percent), a fever and nighttime sweating and chest pain (4 percent), a cough that lasts two weeks or longer and produces bloody sputum or chest pain (4 percent), as well as a cough that lasts two weeks or longer and produces pain in the chest (3 percent), Weight loss and loss of appetite, sputum containing blood, fever and sweating at night and chest pain, coughing for two or more weeks, fever and sweating at night and chest pain, loss of appetite and chest pain are all typical symptoms. (1 percent) (2015) D. and Jr. .

2.4.4 Knowledge on the Preventive and Control Measures of Tuberculosis

In a research to assess the behavioral patterns of adult tuberculosis patients in the Eastleigh division of Nairobi County, Kenya, 255 (66.4%) of the respondents said they usually ate balanced meals, whereas 129 (33.6 percent) said they didn't consume a balanced diet to avoid TB. A total of 290 people (75.5 percent) said they always give their kids the BCG vaccine and that they do the same whenever they see a baby. This finding indicates that 353 (91.9%) of the respondents sought medical attention from professionals.

On the other hand, 359 (93.5%) of the respondents sought medical attention when they believed they had TB symptoms. 350 respondents, or 91.1%, maintained their homes well ventilated, it was discovered. Regarding health risk behaviors, while 239 people (62.2%) had never avoided TB patients, 145 people (37.8%) had never avoided being in close proximity to them. (Yusuf, 2011).

The study's findings showed that 360 (93.8%) of the participants covered their mouths and noses while sneezing or coughing. More than two thirds of the 348 respondents, or 90.6%, were able to prevent TB by washing their hands after sneezing, coughing, or handling objects in public. 322 respondents, or 83.9 percent, said they deposited sputum discharge in a separate plastic container. When coughing or sneezing, the majority of the 300 respondents (78.1 percent) said they cover their mouth with a face mask or tissue. 77.3% of the 298 respondents said they had droplet infection control for personal and private utensils, drinking and eating equipment. According to the argument based on these findings, 307 respondents (or 79.9%) said that isolating TB patients is not an action that is taken to prevent TB, as opposed to this, 77 respondents (20.1%) said that isolating TB patients is a practice of TB prevention behavior.

A review of the respondents' overall good and bad TB prevention practices revealed, 258 (67.2%) of the respondents had excellent prevention behavior, while 126 (32.8%) of the participants had bad prevention behavior. The findings of this study demonstrate that a minimum of two-thirds of those who responded practiced excellent levels of TB prevention measures, which are believed to lower transmission. This result is in line with research conducted in Bangkok by Suree (2009), study demonstrated that the majority of individuals who adopted effective prophylactic measures had a low chance of developing or spreading TB.

Study of pulmonary tuberculosis patients' knowledge and awareness of tuberculosis among those in a rural West Bengal region with regard to TB risk factors. In response to the question, a clean environment can reduce the chance of developing tuberculosis by 10%, healthy eating and drinking can reduce it by 40%, quitting smoking and drinking is effective in doing the same for 15% of responders, and quitting both can reduce it by 15%. Other responses included: drink lots of water, stay away from dust, supplement nutrition, treat colds, and keep a safe distance from TB patients (1 percent) (D. and Jr., 2015)

2.4.5 Perception of Tuberculosis

67 percent of respondents had a favorable impression of TB, and 33 percent had a negative perception, according to the descriptive study by Sandha et al. (2017) on the level of community understanding and opinion of tuberculosis (TB) in Denpasar, Bali.

Table 7 displays the various perceptions according to Widiasari et al (2020), categories of gender, age group, education level, occupation, and income. While respondents with the dominating productive age had a favorable perspective of TB, those with an unproductive age all had negative perception categories of the disease (69.6 percent). Respondents who had knowledge of the research conducted in popular elementary and junior high schools had bad opinions of TB (80 percent). Comparatively, those with backgrounds in senior high school and college studies tended to have a good impression of tuberculosis (72.2 perccent). There have been conflicting findings in other studies on how the public views TB. The majority of participants (67.3 percent) in a study done by Sandha et al. (2017) in Kecicang Village, Karangasem, had favorable opinions of tuberculosis (TB).

Based on the respondent's age, education level, occupation, and income, there was no difference in the distribution of perception categories in this study. Another study by Pasek et al. (2013) in the service area of Buleleng 1 Public Health Center discovered that 82.5% of respondents had favorable attitudes of TB.

Different findings were obtained from the qualitative study carried out by Friskarini et al. (2017) on adolescents in the Tangerang District between the ages of 15-20. The majority of participants in this survey believed that pulmonary tuberculosis was not a serious illness, which may have contributed to the development of a lack of concern for the condition.

The majority of respondents had the incorrect perception about TB, according to qualitative research carried out by the media in West Sumatra Province's Sungai Tarab District, Tanah Datar Regency. The majority of participants in the Focus Group Discussion (FGD) session held the belief that black magic and genetics are to blame for TB's occurrence.

The majority of informants also believed that TB symptoms were common and did not require special treatment, which made it difficult for them to seek out medical assistance (Pengetahuan et al., 2011). The information above demonstrates several types of popular perceptions on TB in various Indonesian regions. There are a number of places where the community is dominant and where TB is viewed negatively. The success of TB control initiatives might be impacted by public perception, particularly in Indonesia. One of the essential components of TB management that is susceptible to public perception is the adherence to TB patients' treatments.

In a research project by Putera et al, it was discovered that knowledge and perceptions affected the adherence to TB patient medication on a population in the Province of East Nusa Tenggara (NTT). Descriptive Study: Knowledge and Attitudes of Communities regarding Tuberculosis (TB) in Denpasar, Bali Respir Sci 2020, Vol. 1 No. Only people's perceptions of TB substantially affected TB patient medication adherence in the multivariate analysis, with an OR (95 percent confidence interval (CI)) of 4.75 (2.30-9.86) and a p-value of 0.001, while demographic variables and knowledge of TB had no significant impact.

According to research by Pasek et al. (2013), patients who had favorable attitudes of TB were 21.41 times more likely to adhere to their treatment plans than those who had negative impressions. (p = 0.018).

Another study found that drunkenness, pricey healthcare facilities, having TB in the family, age and marital status, and monthly income were all associated with TB treatment adherence in addition to knowledge and attitudes of the disease (Pasek et al., 2013).

According to a study by Sandha et al. (2017), the perception statement "TB is a shameful disease" is the one that received the majority of the respondents' unfavorable responses. The respondent's awareness of having a complaint and the cost of TB examination at the Public Health Center and hospitals, which was rated as expensive, were other statements that were primarily replied negatively by respondents. This fact can serve

as an example of the CNR and SR's low achievement rates, particularly in Bali (Sandha et al., 2017). Patient arrival for self-examination and medication compliance had an impact on CNR and SR. When symptoms lessen, TB medications can be withdrawn if most people still think TB is an embarrassing condition. There is a substantial risk of late diagnosis, illness transmission, noncompliance with treatment, and drug resistance, as well as delays in seeking out medical treatments. According to various research, there is a connection between popular perceptions of TB and knowledge levels. Consequently, increasing knowledge is one of the behaviors that might transform negative perceptions into positive ones.

In a study done by Putu et al. (2010), it was claimed that the absence of a family history of TB and never reading or participating in TB education activities were the main causes of the low individual's awareness about TB (Putu et al., 2010). Therefore, one strategy for raising public awareness and perceptions of TB is to enlighten the larger population about the disease. To raise public awareness and attitudes of TB, health professionals can educate patients with TB and their families and personally provide them with information (Putu et al., 2010).

The study employed a cross-sectional methodology to look at the attitudes, knowledge, and views of adults in the Thika Town Council who are between the ages of 18 and 50 regarding tuberculosis. 316 town council members were questioned using a straightforward random sampling technique. Data were entered and examined. The study had 196 (62%) more female participants than male (38%) participants, according to the findings. The majority of respondents, 211 (66.8%), stated that they believed TB to be a disease mostly affecting the poor, while 105 (33.2%) did not. The study's findings showed that 273 respondents, or 86.4 percent, believed that TB can be healed while 43 respondents, or 13.6 percent, believed that TB cannot be cured. Of the 316 participants in the study, 214 (67.7%) believed that hospitalization for TB was required, whereas 102 (32.3%) disagreed.

2.5 Conceptual Framework

The world's deadliest communicable disease is tuberculosis (TB) (World Health Organization report, 2014). Today, TB remains a serious global public health concern. Out of around nine million cases, there were 1.8

million estimated fatalities globally in 2008, it was estimated to be a global emergency. TB incidence, prevalence, and mortality were estimated at 2,300,000, 2,800,000, and 250,00, respectively, in the WHO African area in 2010, which had an estimated population of 836,670,000. (World Health Organization, 2010). In addition, it was projected that there would be 1.5 million death cases of tuberculosis (TB) and 9.0 million new cases worldwide in 2013. (WHO, 2014). In 2014, there were 9.6 million instances reported, which also resulted in 1.5 million fatalities. Men made up 5.4 million of the total TB cases and deaths, while women made up 3.2 million and children made up 1.0 million (World Health Organization, 2014).

TB differs from other diseases with high fatality rates in that it has a very effective course of therapy. The age range of 15 to 49 has the highest incidence and mortality of TB. As a result, TB has a significant economic cost in terms of missed production. Medical care typically permits patients to resume an active and financially rewarding life, frequently without any lingering morbidity or disability. By using medical care to render individuals non-contagious, the disease's overall burden can be greatly minimized and transmission stopped. According to estimates, TB accounts for 26% of all adult fatalities that could have been prevented and is the most affordable disease to cure (Murray et al., 1990).

Future forecasts, however, indicate that just one country—and none of the low incidence ones—will be able to eradicate TB by 2050. The authors' finding that even in countries with the lowest incidence rates in the world "TB eradication in the coming decades may therefore seem challenging" (Lonnroth et al., 2015). The rhetoric and policy governing TB care have undergone a significant shift over the past ten years from one that prioritizes a curative model to one that also seeks to address the social determinants of disease that increase a person's risk of contracting TB and affect their ability to adhere to a course of treatment (Hargreaves et al., 2011; WHO, 2012). The various aspects of population health that are social, political, economic, and environmental, in turn, TB risk and treatment outcomes, are referred to as social determinants of health (SDH). Some claim that the social determinants of TB are ignored despite evidence that wealth inequalities are a significant predictor of TB rates in low incidence countries. This is due to the prevalence of biomedical approaches (Rasanathan, 2011), which continue to emphasize case detection, case management, screening, and surveillance, particularly of migrant communities, in TB control efforts. (Ploubidis et al., 2012; Semenza, 2010). TB policy may therefore be a reflection of concerns over border

security (Reitmanova 2012; Craig, 2007). As a result, the situation in low incidence countries is indicative of a global response to TB that has focused on technology and biological cures in addition to the overall failure of global TB control efforts to address the disease's core causes.

In the underdeveloped world, tuberculosis kills 25% more adults than malaria, diarrhea, or immunologic deficiency syndrome combined (AIDS). Raviglione and Obrien (2004) claim that Mycobacterium tuberculosis, in particular, is the primary cause of tuberculosis, one of the most frequent infectious diseases. In 2015, 10.4 million people had TB, and 1.8 million of them passed away from it (including 0.4 million among people with HIV). More than 95% of all deaths in low- and middle-income countries are due to TB. The most populous country is India, followed by Indonesia, China, Nigeria, Pakistan, and South Africa, which together account for 60% of the world's population. In 2015, 170,000 children died from the disease after receiving a diagnosis of TB, according to estimates (excluding children with HIV). One of the main causes of death for HIV-positive patients is TB. TB was the cause of 35% of HIV deaths in 2015. Since 2000, the incidence of multidrug-resistant tuberculosis has declined by 1.5 percent annually on average, with an estimated 480 000 cases worldwide in 2015. In order to meet the "End TB Strategy" targets by 2020, this must quicken to a 4-5 percent annual drop. Between 2000 and 2015, TB diagnosis and treatment are thought to have saved the lives of 49 million people worldwide.

TB can strike anyone of any age, gender, educational level, and line of employment. Patients who believe they have tuberculosis are expected to act appropriately to stop the spread of the disease, comply with nutrition guidelines, and take their medications as prescribed. This will help treat OAT successfully in patients with tuberculosis (Amin and Hidayati, 2018).

Today, TB remains a serious problem for worldwide public health. Approximately 9.4 million, 11.1 million, 1.3 million, and 0.52 million incident cases of TB, 9.6-13.3 million prevalent cases of TB, 1.1-1.7 million HIV-negative deaths from TB, and an additional 0.45-0.62 million HIV-positive fatalities from TB were recorded in 2008, according to the highest estimates (WHO, 2009). Over the past 20 years, the incidence of TB has steadily climbed from roughly 6.6 million cases in 1990 to 8.3 million cases in 2000 to 9.2 million cases in 2006. The Eastern Mediterranean Region (6%) finds 6% of TB cases, the European Region (5%), and the Region of the Americas (5%), respectively (3 percent). An estimated 55% of cases in 2007 were in

Asia, while 6% were in Africa (31 percent) (WHO, 2009). The spread of HIV and TB infections, illnesses, and fatalities have been disproportionately felt throughout Africa. In 2003, there were 1.7 million TB fatalities and an estimated 8.8 million new cases. Even though Africa only has 11 percent of the world's population, there were 31% more fatalities and 27% more diseases there. The 9.4 million new cases of TB that were diagnosed in 2008 included an estimated 1.2-1.6 million (13–16%) HIV positive individuals (best estimate of 1.4 million). Seventy-eight percent of HIV-positive people worldwide reside in Africa (WHO, 2009; Corbett et al., 2006). Prevalence and death rates among the general population have steadily declined in the developed countries from the early 19th century.

However, some minority populations are experiencing a faster TB outbreak., additionally, individuals that abuse alcohol are seen among the homeless, and those who abuse drugs. According to Lönnroth et al., there is a significant socioeconomic gradient in the prevalence of TB between nations, between nations, and within communities, and the most vulnerable individuals are most at risk (Lönnroth et al, 2009). Social discomfort and TB are significantly correlated with one another, based on studies that looked at how TB affected underprivileged communities (Lönnroth et al., 2009). Between 1988 and 1992, there was a 12 percent increase in TB notifications in England and Wales. The lowest 10% of the population saw an increase of 35%, the next two 10% saw an increase of 13%, but the 70% of the population that is more prosperous saw no gain (Bhatti et al., 1995). The socioeconomically disadvantaged in the USA were primarily affected by the TB outbreaks in the 1980s and 1990s. When compared to the city's general population, New York's homeless population had active TB rates of 968 per 100,000 individuals by the middle of the 1980s, compared to 23 per 100,000 (Coker, 2000).

It has been proposed that in some instances, such as inner-city American communities, a more market-oriented approach to public health has changed how healthcare services are justified and distributed and created a "ecological niche" where infectious diseases like TB can spread more quickly (Wallace and Wallace, 1999). The prevalence of TB varies greatly among developing nations. There are 50 cases per 1000 people in Delhi and Calcutta's slums, compared to 3 cases per 1000 in non-slum areas (Ogden et al., 1999). Even though some groups in affluent countries are experiencing a rise in TB incidence, the majority of TB cases—95 percent of all cases—occur in developing countries (Lienhardt and Ogden, 2004). When compared

to infectious diseases like AIDS and malaria, funding for TB control is still comparatively low, and few health advocates have been available for persons with TB. (Gandy and Zumla, 2002). Norway, a nation with a total population of 4.7 million and low TB endemicity, reported 307 new cases of TB in 2007. (Winje et al., 2008). 243 (or 79%) of these incidents involved people who were foreign-born.

The median age of diagnosis for people with TB who were Norwegian-born (including second generation immigrants) was 74 years old. The highest incidence of tuberculosis in Norway are among people from Asia and Africa, and these rates are consistent with the epidemiological conditions in the aforementioned regions. People with ancestry from the following nations—Somaliland, Ethiopia, Vietnam, and the Philippines—had the greatest reported TB cases in 2005 (classified according to the number of cases) (Winje et al., 2006). The countries with the largest numbers of TB cases in 2006 were Somalia, Ethiopia, Pakistan, Thailand, and the Philippines. (classified according to the number of cases) (Winje et al., 2007).

Ethiopia, a country with a significant TB prevalence and poor income levels, as of 2007, there were 314,267 new instances of the illness, with an estimated incidence rate of 378 cases per 100,000 people. (Bureau of Population Reference, 2007). The WHO's goal of finding 70% of infectious TB cases is substantially higher than the current TB case detection rate, which is significantly lower with just a 28 percent detection rate of new smear positive cases and a 40% detection rate of all cases. (WHO, 2009). Ethiopia is ranked seventh out of the 22 countries with the highest burdens in the world. (WHO, 2009).

One of the newly established Sustainable Development Goals' health objectives is to end the TB epidemic by 2030.

2.6 Summary

The works of other researchers were reviewed in this chapter. Relevant theories have also been examined with empirical evaluation of others' work. The studied literature has shown that outcomes have not received significant attention of young adults' knowledge and perception on tuberculosis in Ghana. This research aims to provide results by addressing this gap in the literature.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

A thorough explanation of the data collection procedure is given in this chapter. A brief description of the population under investigation, an estimate of the population's size in general, sampling techniques, sample sizes, and tools for data collecting were also provided. This chapter also covered the methods used to assess the data that was gathered, as well as the procedures followed to ensure the test items' validity, correctness, and dependability. The methods through which ethical concerns were taken into account while the research was being conducted are discussed at the end. A research methodology can be thought of as the planned course for doing a study, and it is crucial to manage the variables that affect how reliable and accurate the results will be (Burns & Groove, 2005). The overall goal of this study is to evaluate OPD patients' knowledge and perceptions of tuberculosis when they are evaluating their care at Kwadaso Seventh-day Adventist Hospital. As a result, the study's methodology is quantitative and includes a description of confounders.

3.2 Research Design

The general approach to answering a research question, as well as recommendations for enhancing the study's integrity, is referred to as a research design (Polit & Beck, 2008). The research design reveals the fundamental methods the researcher used to address their research questions or test the proposed hypothesis (Polit & Beck, 2010). The non-experimental (descriptive) design, more precisely the survey design of research, will be used in this study. By concentrating on a small portion of a population, this type of design is widely known for offering a numerical description of patterns and behaviors within that community. This sort of design, which can be cross-sectional or longitudinal, use questionnaires to gather data and then extrapolates the results to a larger population depending on the results from the sample. Because the primary goals of this study are to examine, this design would be incredibly suitable to assess the knowledge on the risk factors of TB, determine respondents' knowledge on the mode of transmission of TB, determine respondents' knowledge on the signs

and symptoms of TB, determine respondents' knowledge on the prevention and control of TB, determine respondents' knowledge on their perception of TB.

3.3 Study Setting

Seventh-day Adventist Hospital, Kwadaso

Seventh-day Adventist Hospital, Kwadaso located near Sofoline a suburb of Kumasi in the Ashanti Region of Ghana. It was established as a medical centre in 1989 in Kumasi and is a member of the Ghana Adventist Health Services an institution under Christian Health Association of Ghana. The hospital receives patients from the university and its environments, offering them twenty-four (24) hour services. The study was carried out at the O.P.D unit of the hospital.

The hospital has clinical and non-clinical directorates. The clinical directorates include, General Out-Patient Department, Medical Unit, Surgical Unit, Maternity Department, Dental Clinic, Infectious Disease Unit, Pediatric Unit, Emergency Unit, X-Ray Department, Laboratory and Radiology Department, Theatre and Pharmacy. The non-clinical directorate comprises of the General Office, the General Administration and the Accounts Department.

The total populations of staff in the clinical directorates are 205. There are 10 doctors, 4 pharmacists, 95 senior staff nurses, 50 junior staff nurses, 3 physician assistants and 15 dispensing technicians. There are also 5 nurse anesthetists, 12 laboratory technicians, 3 radiographers and 8 workers at the records. The management members comprise of the medical director (professionally medical doctor), nurse manager, pharmacist, administrator, accountant and hospital chaplain

3.4 Selection of Study Subjects

This part would describe where the subjects came from, how they were chosen for the sample, and the requirements for including a respondent in the study as well as the requirements for excluding the others.

3.4.1 Study Population

Any group of persons that satisfy a specific requirement is referred to as a population by the researcher. (Brink, Van der Walt, & Van Rensburg, 2012). A research population is also a specially defined collection of people or things with a common set of characteristics. Adult patients at OPD Seventh-day Adventist Hospital, Kwadaso, will comprise the population for the objectives of this study.

3.4.2 Sample size

In order to collect information about a subject in a way that truly reflects the population the researcher is interested in, sampling is the process of selecting a sample from a population. (Brink, Van der Walt, & Van Rensburg, 2012).

By analyzing a relatively small sample instead of the wider target population, a sampling technique aids in acquiring aa typical sample of the target population as a whole.

The fraction of a known population that has been chosen to take part in a study is known as a sample. (Polit & Beck, 2008). Using the sample size calculator developed by Krejcie and Morgan in 1970, the sample size for this investigation will be decided. Using chi-square at a degree of freedom of one, the agreed-upon population size, and a confidence level of 95% provided as 0.05 yields the formula as shown below.

$S = X^2NP\ (1-P)\ /d^2\ (N-1) + X^2P\ (1-P)$; where S = the required sample size,

X^2 = table value of chi-square for one (1) degree of freedom at a desired confidence level (3.841),

P = proportion of the population (assumed to be 0.50)

N = total population.

d = degree of accuracy given as a proportion which is 0.05

The sample size required according to the formula above is 242.45. Despite the fact that all sampled respondents could have been contacted because they were all present, a non-response rate of 17% was calculated and added to the initial sample size of 242.45 to yield a final result of 300.7. (1 decimal place).

3.4.3 Criteria for Inclusion and Exclusion

For the investigation, simple random sampling will be used. Clients at the OPD were given pieces of paper with the options of yes or no; those who chose yes were all included in the study, while those who chose no were not. The study used a 300 persons sample size. The technique utilized to gather information from respondents included both self-administration and interviewer administration.

3.5 Techniques, Instruments for data collection and analysis

A systematic survey comprising both closed-ended and open-ended questions was developed. The respondents provided information on their understanding of the TB transmission mode, risk factors, symptoms, and prevention and control. Descriptive statistics were utilized to analyze the data using the Statistical Package for Social Sciences (SPSS) version 20, and frequency tables were used to present the results.

3.5.1 Protocol for a typical subject

Before administering the test items, all research subjects had their understanding of the study's goals confirmed. After establishing rapport, the research subjects were guided through the questionnaire's six (6) topic sections.

In the first section, questions about sociodemographic factors such age, sex, occupation, level of education, and religion were asked. For the first section, the subjects completed 5 test items in total, and it took an average of three (3) minutes.

The second section of the study, which involved questions about clients' understanding of the risk factors for tuberculosis, was likewise administered to the study participants. The third section consists of inquiries about clients' understanding of the means of tuberculosis spread. The fourth section addressed clients' awareness of the symptoms and indicators of tuberculosis. The fifth section also addressed clients' understanding of tuberculosis prevention and control. The fifth and final section examined how different people perceive

tuberculosis. There were two (2) yes-or-no questions in this segment. Each study session concluded with a thank-you to the participants. To avoid putting the interviewees under any strain, the interviews were conducted in a calm and friendly manner.

3.5.2 Steps taken to ensure data quality

An accomplished biostatistician from the Kumasi South Hospital and the academic supervisor initially assessed this questionnaire. The OPD and public health unit staff at the hospital served as the research assistants who administered the questionnaire to the study participants. Each test item and its intended measurement were thoroughly and completely explained to all of the participants. Their participation in the orientation contributed to the uniformity of task comprehension and execution, which served to ensure the quality of the data. Each test topic was reviewed during the orientation, and everyone was aware of its importance as well as the proper ways to phrase questions to elicit the desired answer from responders.

3.5.3 Test reliability and validity

An expert statistician and the project manager analyzed the questionnaire to make sure it was legitimate both on the outside and inside. 50 OPD patients from Hart Adventist Hospital in the Ashanti Region were chosen at random to pre-test the questionnaire since they had many traits with the OPD patients in the sample frame. The pre-testing responders weren't involved in the main investigation. Following the completion of the pre-testing, several test items had minor alterations to reflect the precise import of the test items. This was carried out to verify the test device and spot any potential issues with it. The questionnaire was viewed as quite effective at measuring what it set out to test.

3.6 Analysis of Data

Priority was given to examining the data for consistency, accuracy, comprehensiveness, and completeness. An auditing procedure was also applied to the complete set of questionnaires to make sure the results added up to the final projected amount. These were all completed by hand.

There was developed a structured questionnaire comprising both open-ended and closed-ended items. The respondents provided information on their understanding of the route of transmission, risk factors, symptoms and indications, prevention and control, and perceptions of TB. Tables were utilized to display the findings after descriptive statistics were applied to the data analysis using the Statistical Package for Social Sciences (SPSS) version 20.

The respondents' ages were divided into four (4) groups, ranging from those who were 18 to 25 years old to those who were 46 years old or older.

To identify potential correlations, knowledge and perception of TB as a dependent variable were thoroughly evaluated with independent variables as gender, occupation, education level, and religious affiliation. The strength of the link between knowledge and perception of TB and independent variables was then determined using the chi-square test and logistic regression, respectively. The patients' understanding and impression of TB were shaped by five (5) different variables. Following the completion of a Chi square analysis using dietary practice as the dependent variable, the independent variables that were significant at a 95% confidence level were further looked at using binary logistic regression.

Finally, using an excel template where the replies from the study participants were entered and the frequencies of the responses were counted, the impediments and potential solutions were also examined. Following all of this analysis, the findings were laid out in straightforward tables for in-depth debate.

3.7 Ethical consideration

During our data collection, permission to perform the study was requested from the proper authorities in the study location. The confidentiality of the respondents was guaranteed. Respondents received explanations as to why they should give the necessary data.

3.7.1 Approval for the study

The researcher requested and received approval for the study from the Ghana Institute of Management and Public Administration's ethical committee (GIMPA). This was carried out following the sub mission and approval of the research protocol by the committee.

3.7.2 Permission from the Head of Facility

After a research protocol was brought to them for approval through the research section of the medical director, the head of the institution completely consented for the research to be conducted, and this was supported by a letter to the headquarters.

3.7.3 Collaboration from Medical Superintendents

The Medical Superintendents of the Seventh-day Adventist Hospitals in Kwadaso and Hart Adventist Hospitals, where the actual research study and pre-test were conducted, were also asked for and granted permission. They were given a research protocol, and arguments over the study's parameters ensued. All of the Heads of the many hospitals contributed to the success of the data collecting in the various hospitals because the study's findings will help form policies about the welfare and health of the population.

3.7.4 Subjects involved in the research

The tenets that guided the data collecting were informed permission, confidentiality, and anonymity. All respondents were given a thorough explanation of the study's objectives in order to help them comprehend the study's motivations and willingly elect to participate. Each responder signed a consent form with the researcher or the research assistant to give their permission. This made it possible to distribute the questionnaire.

3.7.5 Possible benefits from the study

The respondents were properly informed that taking part in the research was purely voluntary and that there were no financial benefits. However, the research's findings can aid in the development of public policies pertaining to population welfare and health. All potential subjects received thorough explanations of these.

3.7.6 Possible discomforts or risks

The respondents were informed that there are no known hazards or discomforts related to the research, and that they can always ask for further information if they are concerned. Additionally, they were urged to skip questions if required and return to them later. Once more, they were told that they had the freedom to pause the interview whenever they felt like it. However, they were made aware of how long the activity would last. They were also informed that they had the option of quitting the interview altogether.

3.7.7 Confidentiality

The respondents were informed and given the assurance that any information they provided would only be used for the purposes of the study, which helped to maintain confidentiality. Additionally, the respondents received adequate notice that the provided raw data would not be shared with outside parties. During the study, identifiers like respondent names and contacts were not collected to further anonymity. The respondents were also informed that the principal investigator, research assistants, academic supervisor, and the GIMPA Ethics Committee would be the only people with access to the data, and that all materials (consent forms and questionnaires) would unquestionably be stored in a file and locked in a cabinet of the principal investigator. The study subjects were reminded once more that the research was an academic exercise designed to help the primary investigator earn a Master of Public Health Certificate, even though the results may be highly helpful to everyone in every region of Ghana.

3.7.8 The Consent Process

Comprehensive detail was given to all prospective research respondents with all issues about the study duly clarified. They were informed that they will be answering questions on five (5) thematic areas ranging from the socio-demographic issues, knowledge of clients about the risks factors of tuberculosis, knowledge of clients about the mode of transmission of tuberculosis, knowledge of clients about the signs and symptoms of tuberculosis, knowledge of clients about the prevention and control of tuberculosis, and perception of tuberculosis. They were made aware that their responses to the questions asked would help to establish the knowledge and perception of TB among the population. It was emphasized to them that, their individual rights will by no means be curtailed through signing of the consent form. The respondents in the study, who are all patients accessing OPD services when the research was being done at the hospital duly and voluntarily signed the consent form before the administration of the questionnaire began. You can find a copy of the consent form in the appendix.

3.7.9 Compensation

No payment of any kind, not even non-financial compensation, was made to the medical staff members who signed the consent form and agreed to take part in the study.

3.8 Limitations of the study

As we traveled to the study location and printed our work for the study, we ran into financial difficulties throughout the course of the research. It took time to get to our research site and conduct the questionnaires, which interfered with lectures. Despite these difficulties, steps were taken to ensure that they had little effect on the study's conclusion.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The study's findings are presented in this chapter from a sample size of hundred respondents' samples using questionnaire as data collection tool and simple random sampling techniques as the sampling method.

4.2 Results

4.2.1 Demographics characteristics of respondents

Table 4.1 demographic characteristics

		Frequency N=300	Percent
Age	18-25	120	40.0
	26-35	80	26.7
	36-45	72	24.0
	46 or older	28	9.3
Gender	Female	175	58.3
	Male	125	41.7
Occupation	Civil servant	200	66.7
	Self-employed	41	13.7
	Pensioner	10	3.3
	Unemployed	49	16.3

Educational level	Basic	23	7.7
	SHS	62	20.7
	Tertiary	150	50.0
	Other	65	21.7
Religious affiliation	Christian	230	76.7
	Islamic	70	23.3

The nature of respondents in this study was determined by assessing their demographics characteristics. This is captured by table 4.1 were ages, gender, occupation, level of education and religious affiliation is presented. It is presented that respondents aged 18-25years were 40% of the distribution, 26.7% of them were aged 26-35years, 24% were aged 36-45years while 9.3% were aged 46 or older. Females were dominant (58.3%) while males were 41.7% of the respondents. Civil servants 66.7%, self-employed 13.7% and unemployed 16.3%. Half of the respondents 150(50%) had tertiary education. 230(76.7%) of the respondents were Christians while 70(23.3%) were Muslims.

4.2.2 Knowledge of clients about the risk factors of TB

Table 4.2 Knowledge of clients about the risk factors of TB

	Frequency	Percent
People living in crowded environment	69	16.7
Alcoholics	55	13.3
Poverty	23	5.5
Drugs Addicts	28	6.7

AIDS/HIV-positive individuals	56.0	13.5
Smoking	48.0	11.6
Diabetes	16	3.8
Those who reside in close proximity to TB patient	76	18.4
Malnutrition	24	5.8
Eating a balanced diet	9	2.1
Staying out late at night	9	2.1
Total	413	100

The study's second goal was to ascertain the level of client knowledge regarding TB risk factors. In a multiple response question on knowledge on risk factors, the following responses were obtained. Majority (18.4%) of respondents stated living with persons with TB is a risk factor for the disease, 16.7% mentioned living in crowded environment, 13.5% mentioned that living with people with HIV/AIDs was a risk factors for TB, smoking was a risk factor for TB among 11.6% of the respondents while alcoholism was a risk factors as well as stated by 13.3%. People who were into drugs were also at risk for TB. Few of the respondents stated eating a balanced diet, staying out late and diabetes were risk factors for tuberculosis. Other details have been shown on the table 4.2.

4.2.3 Knowledge of clients about the mode of transmission of TB

Table 4.3 Knowledge of clients about the mode of transmission of TB

Modes of transmission	Frequency	Percent
Having meal with TB infected person	46	18.5
Drinking with the same glass with TB infected person	48	19.3

When a TB patient coughs and sneezes without covering their mouth and nose	78	31.4
By kissing with TB infected person	57.0	23
Through an insect bite	9.0	3.6
Other	10	4.0
Total	248	100

In another multiple response question, knowledge of clients about mode of transmission of tuberculosis upon assessment was covered and results displayed in table 4.3. According to the respondents, tuberculosis was transmitted through having meal with TB infected persons among 18.5% of the distribution, using the same glass with TB infected persons could transmit the disease as indicated by 19.3%. 31.4% of them also stated the airway when a person with the condition sneezes without covering up their mouths or nose. Kissing was a mode of transmission as stated by 23% of the respondents. Other means of transmission as stated by the respondents have been presented on the table 4.3.

4.2.4 Knowledge of clients about the signs and symptoms of TB

Table 4.4 Knowledge of clients about the signs and symptoms of TB

Signs and Symptoms	Frequency	Percent
Chest pain	66.0	14.1
Persistence cough for more than 2 weeks	72.0	15.3
Coughing up blood	71	15.1
Unexplained weight loss	64	13.6
Fever	58	12.3

Night sweats	50	10.1
Shortness of breath	51	10.8
Total	468	100

Table 4.4 shows results on knowledge of clients on signs and symptoms of TB. It is noted that persistent cough for more than 2 weeks was a symptom of the disease, 14.1% mentioned chest pains, coughing up blood also scored 15.1% of the respondents. It was also found that unexplained weight loss that was also a sign for TB. Fever, night sweats and shortness of breath were mentioned by 12.3%, 10.1% and 10.8% of the respondents respectively. Table 4.4 shows results from a multiple response question.

4.2.5 Knowledge of clients about the prevention and control of TB

Table 4.5 Knowledge of clients about the prevention and control of TB

	Frequency	Percent
Eating balanced diet	46	7.8
Staying away from TB patients	73	12.4
Covering your mouth and nose while sneezing or coughing	72.0	12.2
Encourage getting BCG vaccination at birth	64.0	10.9
Avoid spitting around	68	11.6
Maintaining sufficient sunlight and airflow in your home	55	9.3
Isolation of TB patients from the wards	67	11.4

Coughing, sneezing, and touching objects in public locations all require washing your hands.	67	11.4
Going for early treatment whenever you have suspected sign of TB	74	12.6
Total	586	100

Table 4.5 shows multiple clients concerning the preventive measure and control for TB. Avoiding the close contact with TB infected persons was a means of prevention among 12.4% of respondents. 12.2% made mention of covering your mouth and nose while sneezing or coughing as preventive measure against the condition. Vaccination with BCG at birth prevented the condition as stated by 10.9% of respondents. Avoiding the habit of spitting around can prevent the spread of tuberculosis. Good ventilation and adequate sunlight were enough to prevent the condition among 9.3%. Isolation from TB wards and hand hygiene after coughing or sneezing or making hand contact with items in public places could prevent the infection. Early treatment when a sign is identified could lead to a prevention of a fully blown tuberculosis condition.

4.2.6 Perception of client on Tuberculosis

Table 4.6 Perception of client on Tuberculosis

	Frequency	Percent
Tuberculosis is an embarrassing disease	63	9.5
Tuberculosis patients must be isolated away from society to prevent contagion.	68	10.3
I checked myself into the public health center when I complained of a cough for more than two	65	9.8

weeks with fever.

If my cough lasts longer than two weeks, I would rather buy medication at the pharmacy than check myself into a health facility.	75	11.3
I don't need to know information about Tuberculosis	62	9.4
Providing Tuberculosis information to the public is not necessary.	60	9.1
Tuberculosis an incurable disease	62	9.4
If there are families or people in the neighborhood is experiencing cough complaints more than 2 weeks with fever, you would advise them to check with the health facility.	73	11.1
Health checks are not important.	61	9.2
Tuberculosis treatment should be discontinued if complaints are already improved	72	10.9

Total	660	100

Table 4.6 shows results on perception of client on TB. 11.3 % to if I have a cough for more than 2 weeks, I would rather buy medication at the pharmacy than check myself into a health facility. 11.1% responded positively to if there are families or people in the neighborhood are experiencing cough complaints more than 2 weeks with fever, you would advise them to check with the health facility. TB is an embarrassing disease. TB patients must be isolated away from society to prevent contagion as mentioned by 10.3% participants. I checked myself into the public health center when I complained of a cough for more than two weeks with fever. I don't need to know information about TB. Providing TB information to the public is not necessary. 9.4% respondents indicated that TB is an incurable disease. Health checks are not important. TB treatment should be discontinued if complaints are already improved as responded by 10.9% of participants.

4.3 Discussion

This section of the study deals with an evaluation of findings made and presented in the results chapter of this study. Following are some research queries that the questions will attempt to address; what knowledge do clients have on the mode of transmission of TB, what knowledge do clients have on the risk factors of TB, what knowledge do clients have on the signs and symptoms of TB, what knowledge do clients have on the prevention and control of TB and what are the perception of client on TB?

4.3.1 Sociodemographic Characteristics of Respondents

The study made an observation that the samples chosen was typical of the general population as the youth were the majority, females were dominant (52%), the nearby areas is resident to individual who are mostly

having higher education hence it was expected that more of them will be civil servants hence the high civil servants. The dominance in the Christian religion was also found in this study's findings.

4.3.2 Knowledge of clients about the risk factors of TB

From the findings made it is right to mention that, study participants were knowledgeable of the risk factors of the disease. Majority which was 18.4% stated that residing with an infected person was a strong risk factor for the condition. 16.7% indicated that living with HIV/AIDS patients was a risk factor. This was because, persons with HIV/AIDS had an immunocompromised system and easily contract tuberculosis. Other activities that could lead to the diseases were smoking and alcoholism. These indulgences led to a reduce immunity strength hence serves as risk factors for tuberculosis.

Donald et al (2010), and Bates et al (2007), spell out clearly that smokers and older individuals were at increased risk for infections that graduate to an active form of the condition. Wallis (2008), also stresses on the effect of immunosuppressive drugs and could cause the condition to take effects. It can therefore be mentioned that disease that lead to immunosuppression could also be risk factors as found in this study where HIV/AIDS patients were at increased risk for tuberculosis Ofukwu (2008), also stresses on diseases that cause immunosuppression and could lead to tuberculosis. These were HIV, diabetes and users of tobacco and alcohol as well since they go a long way to reduce the immune strength of the individual.

4.3.3 Knowledge of clients about the mode of transmission of TB

It is factual that knowledge on a disease`s mode of transmission is one main way preventive strategies can be gotten for the prevention of a disease condition. In the study, numerous modes of transmission for tuberculosis were attained and they dwelled on the means of contact with the air droplets from the infected person to a healthy one. As a result, the infected person was always a source of the disease in most cases and transferred to an uninfected person through physical contact or through a nasal air contact. Air contact with the infected person through sneezing and coughing was also mentioned among 31.4% of participants in this study. Another contact that could lead to contracting the disease was to make oral contact through kissing

an infected person. In such an act, the infected person`s nasal opening is in very close proximity to the health person, an exchange of gases carrying the infective dose is what is needed to transmit the disease.

Malhotra et al (2002), identified that almost all of their study participants (95.3%) were aware that Tuberculosis had air as its route of transmission. A correlation between the results of this study and those of other studies carried out in other locations suggests that public awareness and comprehension of tuberculosis have grown.

Christina et al (2009), showed that 85% of the respondents believed in respiratory droplets released during coughing or sneezing. These findings are consistent with that of this study on mode of transmission. Direct contact with personal items with the bacteria could also lead to the contraction of the disease.

4.3.4 Knowledge of clients about the signs and symptoms of TB

Assessing research participants' knowledge of tuberculosis signs and symptoms was the third of the study's stated goals. This was basically to identify if these study participants could detect the disease which will be useful in attaining how the disease is responded to. Tuberculosis was a chest related disease, as such the coughs and chest pain a health issue was the lead signs and symptoms.

Consistent with results from Corless et al. (2002), stated chest pains as a sign of TB, while Yadav et al (2006), also indicated that in their study, 49% of the participants indicated cough as sign for the condition. According to findings in this study, 14.1% of the participants mentioned persistent coughs, coughs that produce blood was also identified as sign and symptoms. Weight loss which was sudden was mostly caused by diseases, as such a considerable percentage of the participants' re-echoed loss of weight appropriately as a symptom of the illness. According to the study's findings on awareness of symptoms and indications, it can be confidently mentioned that participants were knowledgeable with regards to the possible means of detection for tuberculosis.

According to Raviglione and Obrien (2004), tuberculosis could affect all parts of the body but mostly the lungs and brings about signs as mentioned in this study as coughing, chest pains and loss of breath at times. There is a confirmation of signs of the condition in this study.

Eastwood and Hill (2004), clearly support the findings of this study on signs and symptoms of tuberculosis among participants. In their study, they identified persistent coughs, the three primary symptoms are chest pain, breathing difficulty, and bloody coughing while other ones were weakness, unexplained weightless, inability to eat well, fever and sweating at night even in a cool environment. Findings in this study are therefore consolidated by that of Eastwood and Hill (2004).

4.3.5 Knowledge of clients about the prevention and control of TB

Finally, study participants were evaluated on their knowledge on preventive measures for tuberculosis. The finding presented under this section was aimed at identifying whether the disease condition could be well avoided. Findings in this study point out that avoiding a close contact with an infected person where air droplet contact could be transferred to the healthy individual was a sure preventive measure among majority of the participants (12.4%).

From the infected person, breaking the connection of nasal communication by covering mouth when coughing or sneezing was apt to prevent the disease condition. It was therefore necessary to keep infected persons in an area where ventilation is very good and where overcrowding is eliminated adequately. This idea of preventing the spread of the condition is implemented in some health facilities here private cubicles is provided for tuberculosis patients. According to 10.9% of study participants, the immunizations with the BCG vaccine lead to an immune state for tuberculosis for infants.

According to Yusif (2011), 75% of study participants in his study mentioned immunization with BCG vaccine as stated in this study as well. Transmission of the bacteria causing tuberculosis through sputum was also preventable when infected persons avoid the habit of spitting at public places. This was a plausible means by which the bacteria causing the disease in the saliva could be picked up by direct contact or through the surrounding air by a healthy person.

Yusif (2011) found that the majority of the 322 respondents (83.9%) who were patients mentioned using sputum containers in order to avoid spitting into the environment where people could contract the tuberculosis bacteria. Hand hygiene was therefore necessary in preventing tuberculosis as these practices

was one of the most successful methods of illness prevention that could be transmitted by contact with areas contaminated with the microorganism causing diseases.

Finally, early detection of the signs and symptoms for tuberculosis was in itself another means of preventing tuberculosis. It is worth mentioning that though at the point of detection, the disease certainly had been contracted, early detection supported by the right health seeking behavior prevents the disease from getting out of control and presents a bad prognosis in treatment.

4.3.6 Perception of client on Tuberculosis

All statements of perception are dominantly answered correctly by the respondents. The study's findings demonstrated that one type of respondents' perceptions of TB was predominate. It was found that majority of respondents had positive perceptions about TB, and few percentages of respondents had negative perceptions.

The results were in line with a study conducted in Kecicang Village, Karangasem, by Sandha et al. (2017), where majority of participants (67.3 percent) had favorable opinions of tuberculosis (TB).

Another study by Pasek et al. (2013) in the service area of Buleleng 1 Public Health Center discovered that 82.5% of respondents had favorable attitudes of TB.

Based on the respondent's age, education level, occupation, and income, distribution of the study's perceptual categories showed no differences.

Different findings were obtained from the qualitative study carried out by Friskarini et al. (2017) on adolescents in the Tangerang District between the ages of 15-20. The majority of participants in this survey believed that pulmonary tuberculosis was not a serious illness, which may have contributed to the development of a lack of concern for the condition which confirms a relation to the 9.2 percent obtained from the study which indicated that health checks are not important when one contract tuberculosis.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusion

Based on its findings, the study draws the conclusion that the majority of its participants had solid understanding of the risk factors for TB. Mode of transmission has also been identified by most of them. Majority of the respondents had knowledge on the signs and symptoms as well as prevention and control.

5.2 General Recommendation

I recommend that Ministry of health, Ghana health service and health personnel should intensify and encourage education on TB among the general public. Providing information about TB to the broader community is one method that can be used to increase public knowledge and perceptions about TB.

The Department of Health should launch a comprehensive community education campaign to correct any false assumptions people may have regarding tuberculosis.

Education and personal provision of information by health workers to TB patients and their families is also a way to increase public knowledge and perceptions about TB.

Also recommend that Ministry of health, Ghana health service should create and establish more counselling and testing centers for people to voluntarily walk in to get updated information of the disease and tested.

Health care professionals must conduct efficient point-of-care TB screening and employ new point-of-care TB diagnostic techniques to improve TB case identification due to the high number of TB patients who are not diagnosed or treated.

To raise community awareness of TB, healthcare professionals should step up their door-to-door outreach efforts.

Provide incentives and motivation to health personnel who work at the various counselling and testing centers which is established.

Suggestions for further research are researching public knowledge and TB perceptions with more comprehensive area coverage and sample size.

Additional study is required to determine the elements, particularly the impact of information provision on knowledge, that affect public views and knowledge regarding TB.

The variables that affect the effectiveness of TB control require additional study.

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APPENDICES

5.3 Appendix 1: List of research assistants

Name of Hospital	Name of data collector	Contact/number	Designation
Hart Adventist Hospital	Emmanuel Owusu Boanyo	0541175422	Physician Assistant
SDA Hospital, Kwadaso	Sammiratu Iddrisu	0547121824	Community Health Nurse
SDA Hospital, Kwadaso	Mary Aseidu	0241928636	Community Health Nurse
SDA Hospital, Kwadaso	Ruth Odum	0546171409	Nursing Officer
SDA Hospital, Kwadaso	Leticia Berko	0248674797	Laboratory Technician

SDA Hospital, Kwadaso	Priscilla Amoah	0272610632	Senior Mental Health Nurse
SDA Hospital, Kwadaso	Helena Donkor	0249764202	Nutrition Officer

5.4 Appendix 2: Consent form

Consent to be a research subject

Title: Knowledge and perception on TB among OPD clients assessing care at Seventh-day Adventist Hospital, Kwadaso.

Principal Investigator: Emmanuella Appiah-Manu, MPH Student Index number 222024321, Ghana Institute of Management and Public Administration (GIMPA), +233244608686, appiahmanue@gmail.com.

Introduction: This form is intended to provide you with all the information you require to make an informed decision about whether to participate in the research. It is entirely your choice. Carefully read this form and ask questions for clarity before deciding to give your consent. You may keep a copy of the consent form that has been signed. By signing the permission form, you are not giving up any legal rights.

Overview of study: The purpose of this research is to determine knowledge of clients about the risks factors of tuberculosis, identify knowledge of clients about the mode of transmission of tuberculosis, determine knowledge of clients about the signs and symptoms of tuberculosis, identify knowledge of clients about the prevention and control of tuberculosis and determine perception of tuberculosis.

Procedure: A questionnaire would be administered by a trained and licensed health worker from the Ghana Adventist Health Service and it will last for 15 to 20 minutes.

Possible risks and Discomforts: No foreseeable risks or discomforts are associated with this activity. Precautions will be taken to protect the confidentiality of your information.

Benefits: The research is not designed to give you direct benefits but outcome of the study will inform decision making towards improving on various aspects of health human resource. There are no payments attached to participating in this research.

Confidentiality: Be rest assured that confidentiality will be maintained. We will keep any records safe. On the records, a study number will be used rather than your name. When the results are released, neither your name nor any other information that could identify you will be included.

Storing and Sharing your information: Coding of any personal information that could give leads to identification will be done before publishing. It is extremely unlikely that anyone will be able to identify you after we de-identified the data.

Withdrawal: You are free to leave the study at any time without incurring any penalties.

Consent and Authorization:

Name of participant: ----------

Signature of participant: ---------- Date: ----------

Name of person conducting informed consent discussion: ----------

Signature of person conducting informed consent: ---------- Date: ---------

Appendix 3: Questionnaire used

GHANA INSTITUTE OF MANAGEMENT AND PUBLIC ADMINISTRATION (GIMPA)

SCHOOL OF PUBLIC SERVICE AND GOVERNANCE (SPSG)

DEPARTMENT OF DEVELOPMENT POLICY

QUESTIONNAIRE ON KNOWLEDGE AND PERCEPTION ON TUBERCOLUSIS AMONG OPD CLIENTS AT HART ADVENTIST HOSPITAL

FORM No.: _____

Part I: A: Socio-Demographic Characteristics

1. Age ……..

2. Gender

Female [ ]

Male [ ]

3. Occupation

Civil servant [ ]

Self-employed [ ]

Pensioner [ ]

Unemployed [ ]

4. Educational level

Basic [ ]

SHS [ ]

Tertiary [ ]

Other (specify)……

5. Religion

Christian [ ]

Islamic [ ]

Traditional [ ]

Others (specify).....

Part II: Knowledge of clients about the risk factors of Tuberculosis

(Tick all that apply)

6. In your opinion who can be infected with Tuberculosis?

People living in crowded environment [ ]

Alcoholics [ ]

Poverty [ ]

Drug Addicts [ ]

AIDS/HIV-positive individuals [ ]

Smoking [ ]

Diabetes [ ]

people who share a home with tuberculosis patients [ ]

Malnutrition [ ]

Eating a balanced diet [ ]

Staying out late at night [ ]

Others (specify).....

Part III: Knowledge of clients about the mode of transmission of Tuberculosis

(Tick all that apply)

7. Tuberculosis can be spread or transmit to other people through:

Having meal with Tuberculosis infected person [ ]

Drinking with the same glass with Tuberculosis infected person [ ]

When a person with tuberculosis coughs and sneezes without covering their mouth and nose [ ]

By kissing with Tuberculosis infected person [ ]

Through an insect bite [ ]

Others (specify) .....

Part IV: Knowledge of clients about the signs and symptoms of Tuberculosis

(Tick all that apply)

8. What are the sign and symptoms of tuberculosis?

Chest pain [ ]

Persistence cough for more than 2 weeks [ ]

Coughing up blood [ ]

Unexplained weight loss [ ]

Fever [ ]

Night sweats [ ]

Shortness of breath [ ]

Other specify ……...

Part V: Knowledge of clients about the prevention and control of Tuberculosis

What would you do to prevent Tuberculosis?

(Tick all that apply).

	CONTENTS	YES	NO
9	Eating balanced diet		
10	Staying away from tuberculosis patients		
11	Covering your mouth and nose while sneezing or coughing		
12	Encourage getting Bacillus Calmette Guarin vaccination at birth		
13	Avoid spitting around.		
14	Maintaining sufficient sunlight and airflow in your home		
15	Isolation of Tuberculosis patients from the ward		
16	Coughing, sneezing, and touching objects in public locations all require washing your hands.		
17	Going for early treatment whenever you have suspected sign of Tuberculosis		

Part VI: Perception of client on Tuberculosis

(Tick all that apply).

	CONTENTS	YES	NO
18	Tuberculosis is an embarrassing disease		

19	Tuberculosis patients must be isolated away from society to prevent contagion.		
20	I checked myself into the public health center when I had a fever and a cough that persisted for longer than two weeks.		
21	If my cough lasts longer than two weeks, I would rather buy medication at the pharmacy than check myself into a health facility.		
22	I don't need to know information about Tuberculosis		
23	Providing Tuberculosis information to the public is not necessary.		
24	Tuberculosis an incurable disease		
25	If there are families or people in the neighborhood is experiencing cough complaints more than 2 weeks with fever, you would advise them to check with the health facility.		
26	Health checks are not important.		
27	Tuberculosis treatment should be discontinued if complaints are already improved		

Appendix 4: List of Abbreviations

SDA:	Seventh-Day Adventist
OPD:	Out Patients Department
ERS:	European Respiratory Society
SHS:	Senior High School
SPSS:	Statistical Package for Social Sciences
TB:	Tuberculosis
PTB:	Pulmonary Tuberculosis
WHO:	World Health Organization
HIV:	Human Immunodeficiency Virus
AIDS:	Acquired Immunodeficiency Syndrome
IUATLD:	International Union against Tuberculosis and Lung Disease
BCG:	Bacillus Calmette Guerin
NDH:	National Department of Health
HST:	Health System Trust
CDC:	Centers for Disease Control and Prevention
OAT:	Osteoarticular Tuberculosis
NTCP:	National Tuberculosis Control Programme