



## Knowledge of Tuberculosis among Tuberculosis Patients Attending Federal Medical Centre, Owo, Ondo State, Nigeria

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### Abstract

Globally, tuberculosis (TB) constitutes a significant public health emergency. Despite the downward trend in TB incidence and prevalence, every continent still reports new cases, especially Africa and south-east Asia (WHO, 2012). This study aimed to investigate the signs, symptoms, transmission mode, and knowledge of tuberculosis (TB) among tuberculosis patients attending Federal Medical Centre, Owo, Ondo State Nigeria. A descriptive survey design was adopted, while sample population comprised of all the aforementioned tuberculosis patients. About 151 persons were selected using Multistage sampling procedure. A closed-ended questionnaire collection was used for data collection and the instrument was validated by experts with ascertained reliability. The data were then subjected to statistical analysis of Cronbach's alpha, and a correlation coefficient of 0.76 was obtained. Conclusively, the patients have knowledge of TB signs and symptoms as well as transmission mode. Therefore, this knowledge is recommended to be sustained among the patients.

### INTRODUCTION

Hassan et al. (2017) noted that tuberculosis (TB) constitutes a significant and major public health emergency globally. Nigeria is one of the 22 high burden Tuberculosis countries. A high level of community awareness and positive perception towards TB and its management is crucial for the success of any control strategy. The 2015 World Global TB Report revealed that "TB still maintains the status of the world's biggest threats, due to the fact that, in 2014, the disease caused the death of 1.5 million

people worldwide (1.1 million HIV-negative and 0.4 million HIV-positive)". Apart from the mortality toll from TB, the morbidity effect as indicated by the same report showed that "9.6 million people fell ill to TB in 2014 across the world (5.4 million men, 3.2 million women, and 1.0 million children), with an estimated 12% of the 9.6 million new TB cases in 2014 being HIV-positive" (Hassan et al., 2017; Alao et al., 2020). However, Nigeria was ranked as the 4th on the list of countries with the global TB burden behind India (1<sup>st</sup>), Indonesia (2<sup>nd</sup>), and China (3<sup>rd</sup>)

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as stated in the 2015 Global TB Report. This ranking by the World Health Organization (WHO) positions Nigeria as the African country with the highest TB burden within the African continent (Lawn et al., 1998; Hassan et al., 2017). According to the National Tuberculosis and Leprosy Control Programme statistical report in Nigeria, “90,584 of all forms of TB cases were detected in 2015”. Going by the first national TB prevalence survey report (2012), “Nigeria had a prevalence rate of 323 per 100,000 for all forms of TB and an estimated incidence rate of 338 per 100,000”.

In 2009, United State of America Global Health policy on Global Tuberculosis Epidemic, declared that about one-third of the world’s population or two billion people carried the TB bacteria, and more than 9 million of who become sick each year with active TB could spread it to others (WHO, 2012). Desalu et al. (2013) submitted despite the international attention on TB and Directly Observed Treatment Short-course, knowledge of TB is not well established in Africa. There are still many superstitions and cultural beliefs surrounding TB which hamper its prevention, early diagnosis, and treatment (Hussein et al., 2018). It has been reported that TB patients seek assistance for treatment when the disease is well advanced and that the delay is resulting from various factors such as lack of knowledge, lack of awareness of the symptoms and people’s negative attitude (Thomas, 2002). Patient believed that TB is as a result of s breaking cultural rules that demand abstinence from sex after the death of a family member or after a woman has a spontaneous abortion. Some even believed that only traditional healers could cure TB (Alao et al., 2020).

Hassan (2017); Alao et al. (2020) further opined that the national TB Control Programme covers all the thirty-six states and FCT, including all the 774 local government areas (LGAs) in the country. In terms of geographical spread, the country at the end of 2015 had “5,863 Directly Observed Treatment Short Course (DOTS) centers in the 774 LGAs”. Through the DOTS expansion strategy, dissemination of TB information and services has been promoted through the training of health facilities’ care providers (specifically DOTS and laboratory staff) and also through TB patients, during diagnosis and treatment initiation. Between 2008, when the first TB knowledge, attitude, and practice (KAP) survey was conducted in the country, and 2012, when a similar follow-up study was done, the knowledge about TB was expected to have significantly increased, considering the application of several proven interventions deployed for the implementation of TB services in Nigeria. This included the dissemination of TB messages on the mass media,

printing and distribution of information, education, and communication (IEC) materials, and community sensitization during World TB Day celebrations. Others are related to the expansion of DOTS facilities and training of health workers and community volunteers, to generate demand for TB services within the communities (Lawn et al., 1998).

Hassan (2017); Haasnoot et al. (2010) stated the roles of the mass media in demand creation for public health services have been found to be germane to the creation of awareness and sensitization as well as in reducing stigma and discrimination. The control of TB by way of detecting the cases and placing infected persons on treatment becomes easier when the target population (the general public) becomes enlightened about the disease. There is a relationship between patient’s delay in seeking treatment and knowledge about the causes, transmission, and symptoms of TB. In Nigeria, TB continues to be a major public health problem and it is the largest health problem among the productive age group (WHO, 2012). Konstantinos (2013) reported that in urban centres, most people with chest symptomatic, approach the private clinic for relief. Patient’s adherences to the treatment depend on many factors such as education level and patient’s own idea about the disease. According to WHO (2012), TB was almost eradicated in Nigeria, until it came back in the 90s with the discovery of HIV (WHO, 2012). It is the major opportunistic infection in people living with HIV. TB progresses faster and causes high morbidity and mortalities in HIV patients because of their compromised immunities (Cowger et al., 2019). According to Scott et al. (2014), People are knowledgeable about tuberculosis, if they are without knowledge of tuberculosis, they will not seek care and treatment and the control of TB will be almost impossible. Wang et al. (2007), submitted that general public had heard about TB and are equipped with foundational knowledge of tuberculosis. People are aware about coughing, sneezing and indiscriminate disposition of sputum as primary means of transmission of tuberculosis (Law et al., 2017). According to Nigeria Institute of Medical Research (NIMR) (2014), the spread of TB in Ondo State is rampant among rural dwellers and mostly the poor, that is, those who live in the communities with no access to any form of TB care. TB is a disease of the poor. It is also a disease that could easily be spread through congestion, and it could be found mostly at the community where poverty level is high (Kumar et al., 2011). Jacobs (2011) stated that illiteracy and inadequate sensitization about TB also contribute to its spread where people believe the myth that TB is caused by a witch in the village.

According to WHO (2014), TB prevalence is

high in Ondo cosmopolitan areas, where the population density is high. Most of the care facilities for TB are usually focused in urban areas. Most hospitals in the rural area are not well equipped with TB facilities and that is the source of most cases. In view of this, WHO (2014), suggested that more efforts should be committed to these rural communities to improve active case search. Although, some of these communities are not only poor, but they are also hard to reach, and healthcare facilities are far away from them. Iseman et al. (2012), opined that over the last three decades, there has been an accelerated growth of private practitioners and non-governmental organization like Global Alliance for Chronic Disease (GACD), Kaiser Family Foundation (KFF) among others catering for the health needs of people living with TB in Nigeria. However, the diagnostic and curative abilities of these agencies were not standardized and only a fraction of the diagnosed cases of TB among TB patients attending FMC, Owo completed treatment resulting in low cure rate compared to WHO standard.

TB is a common deadly infectious disease caused by *Mycobacterium tuberculosis* in humans (WHO, 2012). TB usually attacks the lungs, but can also affect other parts of the body. It is spread through the air when people with active TB cough, sneeze, or spit saliva (Konstantinos, 2013). According to Hussein et al. (2018), effective TB treatment is difficult, due to the unusual structure and chemical composition of the mycobacterial cell wall, which makes many antibiotics ineffective and hinders the entry of drugs. The most commonly used drugs for TB treatment include: Isoniazid, Rifampin, Pyrazinamide, Ethambutol. Other drugs that may be used to treat TB include Amikacin, Ethionamide, Moxifloxacin, Para-aminosalicylic acid and Streptomycin (Fitzgerald, 2013). TB can be cured by regular intake of antimicrobial drugs, it was estimated that 8.8 million new TB cases occurred in 2003, of which 1.87 million were fatal due to late diagnosis or non-compliance with treatment (Hoa et al., 2013). TB prevalence is declining in many countries, yet it is estimated that by 2020, there will be over 1 billion new TB infections and 200 million people will succumb to clinical disease and about 35 million will die if TB control is not further strengthened (Center for Disease Control and Prevention, 2012).

According to Global Tuberculosis Control (2012), there were 9.24 million new TB cases (140 per 100,000 population). Also, 9.27 million people developed active new TB cases in 2007 (139 per 100,000 population). Out of these, an estimated 44 percent or 4.1 million (61 per 100,000 population) were new smear positive cases and 1.37 million of them had HIV (WHO, 2009). Since 1980s, TB has

been complicated with HIV/AIDS co-morbidity which contributes to the increase in TB cases due to immune suppression rendering the patients susceptible to new or re-activation of the latent TB (WHO, 2015). TB has been reported to be the leading killer for the HIV-infected population with weakened immune systems. A quarter of a million TB-related deaths were HIV associated, with most of them present in Nigeria (Demissie et al., 2009). The researcher observed upsurge increase in the cases of TB in Owo, Ondo State in the recent years as revealed through the medical record in FMC, Owo and in its TB treatment centres across the state. Despite the government effort in provision of equitable access to high quality of care for diseases of public health importance like TB, treatment success rate is well below the WHO target of 85 percent in Ondo State (WHO, 2012). Despite these efforts, the available record shows that the burden of TB in Ondo State is still high. Despite the international attention on TB and Directly Observed Treatment Short course (DOTs), knowledge of TB is not well established among patients attending FMC, Owo, Ondo State.

Adebimpe et al. (2019) noted that among TB patients and individual in the community in Ondo State, significant numbers of them are not familiar with the signs and symptoms, the mode of transmission, and various types of TB and that many TB patients do not adhere to drug regimen or even complete their treatments as prescribed by health workers. WHO (2016) noted that TB preventive strategies such as covering of mouth while sneezing or coughing, sanitary disposal of sputum and environmental sanitation were not known to significant number of patients attending FMC, Owo, Ondo State. The researchers that among the TB patients attending FMC, Owo, lack of knowledge about the disease as regards its etiology and mode of transmission not only affect the health seeking behaviour of patients but has also affect TB control strategies thereby promoting the transmission of the disease within the community with its negative effects on treatment adherence. It was on this premise, the researchers investigated knowledge of tuberculosis disease among tuberculosis patients attending federal medical centre, Owo, Ondo State.

Based on the above the researcher raised the following questions: do TB patients attending Federal Medical Centre have knowledge of signs and symptoms of tuberculosis in Owo, Ondo State? Do TB patients attending Federal Medical Centre have knowledge of the mode of transmission of tuberculosis in Owo, Ondo State?

## METHODS

A descriptive research design of survey type

was adopted in this study. The population for this study comprised all TB patients attending Federal Medical Centre Ondo State which are three hundred and three (303) patients Hospital Record. Two-stage multistage procedure was adopted to select the respondents this includes proportionate and simple random sampling technique. Proportionate sampling was used to select 50% of the population this gave one hundred and fifty-one (151). At the second state, simple random sampling technique was used to pick the respondents who were willing to participate on the appointed days of the weeks. Data were collected with full cooperation of the respondents. A researcher's designed closed-ended questionnaire was used for data collection. The instrument was validated by three experts from the Department of Health Promotion and Environmental Health Education, University of Ilorin, Nigeria. The reliability

of the study was conducted using split half technique at Primary health care, Mapo, Owo, responses obtained was analysed with Cronbach alpha and a correlation coefficient of 0.76 was obtained. This was high enough and as such, makes the research instrument reliable enough for the study.

**RESULTS AND DISCUSSION**

**Do TB patients attending Federal Medical Centre have knowledge of signs and symptoms of tuberculosis in Owo, Ondo State?**

Table 1 revealed that majority of the respondents in this study 126 (82.89%) have knowledge of sign and symptoms of tuberculosis against 25 (17.11%) who do not have the knowledge of transmission. Since the frequency count and percentage of those who have knowledge of sign and symptoms of tuberculosis is greater than those who do not. It

Table 1: Analysis Showing Knowledge of Sign and Symptom of Tuberculosis

S/n	Knowledge of Sign and Symptoms of Tuberculosis	Yes	No
1	People who have TB show sign of the disease immediately	130 (85.5%)	22 (14.5%)
2	Loss of appetite is an indication of tuberculosis disease in human body	123 (80.9%)	29 (19.1%)
3	You are said to have contracted TB when you have prolonged cough for three weeks without relief after taking drugs	125 (82.2%)	27 (17.8%)
4	Sputum stained with blood suggest you have contact tuberculosis bacteria	128 (84.2%)	24 (15.8%)
	MEAN	126 (82.89%)	25 (17.11%)

Table 2: Analysis Showing Knowledge of Mode of Transaction/Transmission

S/n	Items	Yes	No
5	Living with an infected person under poor ventilation exposes you to tuberculosis disease	139 (91.4%)	13 (8.6%)
6	Tuberculosis can be transmitted between people living or working together	128 (84.2%)	24 (15.8%)
7	Coughing and sneezing generates the highest number of tuberculosis transmission	130 (85.5%)	22 (14.5%)
8	People protect themselves from Tuberculosis by avoiding infected person	130 (85.5%)	22 (14.5%)
	MEAN	132 (86.84%)	20 (13.16%)

is therefore, concluded that tuberculosis patients attending federal medical center, Owo, Ondo state have knowledge of sign and symptoms of tuberculosis.

#### **Do TB patients attending Federal Medical Centre have knowledge of the mode of transmission of tuberculosis in Owo, Ondo State?**

Table 2 revealed that majority of the respondents in this study 132 (86.84%) have knowledge of mode of transaction/transmission of tuberculosis against 20 (13.16%) who do not have the knowledge of transmission. Since the frequency count and percentage of those who have knowledge of transaction/transmission of tuberculosis is greater than those who do not. It is therefore, concluded that tuberculosis patients attending federal medical centre, Owo, Ondo state have knowledge of modes of transmission of tuberculosis.

#### **Discussion of Findings**

Research questionnaire shows that tuberculosis patients attending Federal Medical Centre Owo, Ondo State has knowledge of signs and symptoms of TB. This finding is in accordance with the findings of Scott et al. (2014) which affirmed that People are knowledgeable about tuberculosis, if they are without knowledge of tuberculosis, they will not seek care and treatment and the control of TB will be almost impossible. Wang et al. (2007) also corroborated the above findings in his submission general public heard about TB and are equipped with foundational knowledge of tuberculosis.

Research two showed that tuberculosis patients attending Federal Medical Centre Owo, Ondo State has knowledge of mode of transmission of TB. The finding was justified by the assertion of Law et al. (2017) which established the awareness of people about coughing, sneezing and indiscriminate disposition of sputum as primary means of transmission of tuberculosis.

#### **CONCLUSION**

Based on the findings from the analysis of the tested hypotheses, the following conclusions were drawn: Tuberculosis patients attending Federal Medical Centre Owo, Ondo State have knowledge of signs and symptoms of TB, Tuberculosis patients attending Federal Medical Centre Owo, Ondo State have knowledge of modes of transmission.

Based on the conclusions drawn from this study, the following recommendations were made; (1) Promotion of public health education programmes to sustain the knowledge and awareness of TB among patients and that will in turn enhance behavioural change; and (2) Government at all levels should enforce monthly environmental sanitation among rural dwellers for the purpose of cleanliness

and personal hygiene which reduces the spread of tuberculosis.

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