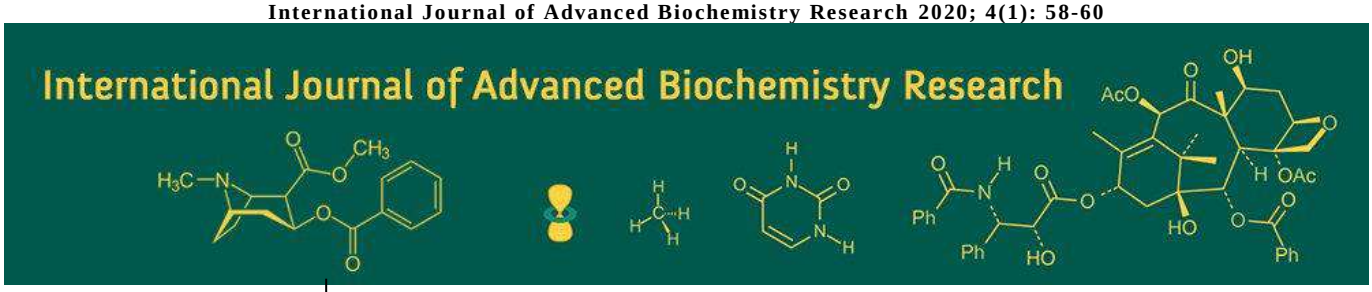

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A 3 year retrospective study on the pattern and prevalence of pulmonary tuberculosis in JOS, plateau state Nigeria: A quantitative analysis

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Abstract
Tuberculosis (TB) is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, ranking above HIV/AIDS. An estimated 417,000 people died from the disease in the African region (1.7 million globally) in 2016. Over 25% of TB deaths occur in the African Region. It is estimated that 407,000 people in Nigeria have TB each year. This was a cross-sectional retrospective study that aimed to study the pattern and prevalence of pulmonary tuberculosis in Jos, Plateau state; Nigeria. This was done with a sample of about 862 people in the sample size. There is a decline in the mount of TB deaths annually from 20.5% to 13. 5% between 2016 and 2018, respectively. Also, there was a palpable an increase in the amount of TB cure rates 27.5 to 41.9% between 2016 and 2018, respectively.

Keywords: EPTB, extrapulmonary tuberculosis, Nigeria, prevalence, JOS, plateau state

Introduction
About a third of the world's population is latently infected with Mycobacterium tuberculae. This simply means that though they have been infected with this bacterium, they are not yet sick with TB and hence can only act as carriers, and not transmitters of the disease in the time being [1].
There is tuberculosis in every part of the world. In fact, as at 2015 the largest number of new cases occurred in Asia, with over 61% of newly diagnosed cases. This was followed by Africa, where there were over 26% of the newly diagnosed cases. Tuberculosis (TB) is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, even ranking higher than HIV/AIDS [2].
In 2016, about 2.5 million people came down with TB in Africa, accounting for over 25% of new TB cases worldwide. An estimated 417,000 people died from the disease in Africa in 2016, with about 1.7 million globally in the same year [3].
In the year 2015, 87% of new TB cases occurred in the 30 high TB burden countries. With only Six countries accounting for 60% of the new TB cases: India, Indonesia, China, Nigeria, Pakistan, and South Africa. A similar statistic was seen in the year 2017, where 87% of the global burden of TB was seen from amongst the 30 high burden countries. Nigeria is not just amongst the 30 high burden countries, it is leading Africa in case burdens [2, 4].
About 407,000 people in Nigeria get infected with TB each year. This estimate covers only the people who are HIV negative. There is a whole different 63,000 HIV positive people that get TB each year. While an estimated 115,000 HIV negative people die from TB in Nigeria each year. Then an estimated 39,000 HIV positive people also die [5].
However, Since the year 2000, over 53 million lives have been saved through effective diagnosis and treatment. With Active, drug-sensitive TB disease is treated with a standard 6-month course of 4 antimicrobial drugs that are provided with information, supervision and support to the patient by a health worker or trained volunteer. Hence, the vast majority of TB cases can be cured when medicines are provided and taken properly [2].
The aim of this study is to retrospectively evaluate the pattern and prevalence of pulmonary tuberculosis in Jos, Plateau state; Nigeria.

Methodology

It was a cross-sectional descriptive study that evaluate 862 patients over a period of 3 years (2016, 2017 and 2018). The study utilized a validated data tool to obtain the required information. Data was obtained from the DOT clinics of the Bingham University Teaching Hospital (BhUTH) and the Plateau Specialist Hospital (PSSH). Data was analyzed using a Microsoft excel and the MS excel statistical tools. Ethical clearance for this study was sought for and granted from the ethical committees of the Bingham University Teaching Hospital and that of the plateau Specialist Hospital.

Result

Table 1: Grand analysis of the Pulmonary TB cases that presented from 1st Jan 2016 to 31st Dec 2018

Parameters		Bhuth		PSSH		Total	
Distribution	**Years**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Total number of cases reported	2016	122	33.1%	187	37.9%	309	35.8%
	2017	141	38.2%	140	28.4%	281	32.6%
	2018	106	28.7%	166	33.7%	272	31.6%
Total	Total	369	100%	493	100%	862	100%
Pulmonary TB cases reported	2016	101	82.8%	162	86.6%	263	85.1%
	2017	119	84.4%	122	87.1%	241	85.8%
	2018	94	88.7%	137	82.5%	231	84.9%
Total	Total	314	85.1%	421	85.4	735	85.3%
Patients with pulmonary TB cured	2016	31	25.4%	54	28.9%	85	27.5%
	2017	49	34.8%	55	39.3%	104	37.0%
	2018	56	52.8%	58	34.9%	114	41.9%
Total	Total	136	36.9%	167	33.9%	303	35.2%
total number of deaths from TB	2016	19	15.6%	47	25.1%	66	21.4%
	2017	26	18.4%	17	12.1%	43	15.3%
	2018	17	16.0%	24	14.5%	41	15.1%
Total	Total	62	16.8%	88	17.8%	150	30.4%
Pulmonary TB patients who died	2016	15	14.9%	39	24.1%	54	20.5%
	2017	21	17.6%	15	12.3%	36	14.9%
	2018	11	11.7%	19	13.9%	30	13.0%
Total	Total	47	15.0%	73	17.3%	120	16.3%
Pulmonary TB deaths in TB death pool	2016	15	78.9%	39	83.0%	54	81.8%
	2017	21	80.8%	15	88.2%	36	83.7%
	2018	11	64.7%	19	79.2%	30	73.2%
Total	Total	47	75.8%	73	83.0%	120	80.0%

Table shows the distribution of cases with PTB that presented in the study time frame (2016 to 2018), how many cases were confirmed cured at the end of that year and how many cases were confirmed dead. it also shows the total number of Admissions made for all kinds of TB and the total number of deaths from any type of TB infection.

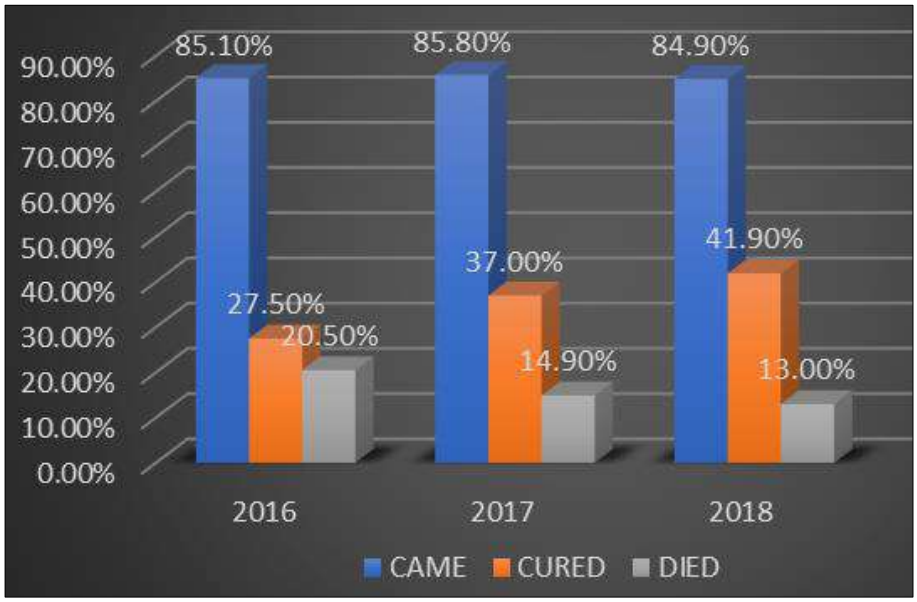

Fig 1: Bar chart showing the graphical representation of the table above. Highlighting the Pulmonary TB cases reported, the patients who were cured and those who died from Pulmonary TB

Discussion

This was a cross-sectional retrospective study that aimed to study the pattern and prevalence of pulmonary tuberculosis in Jos, Plateau state; Nigeria. This was done with a sample of about 862 people in the sample size.

From the study it showed that there was a numerical decline in the number of patients that presented to this health facilities to register in their TB clinics. This may have been as a result of difficulty in transportation to TB clinics far from their residences due to insecurity now prevalent in the country, improvement of the TB services in the PHCs and Peripheral hospitals or as a result of a general decrease in the incidence of TB cases in the state.

Furthermore, there was an 85% probability that a TB patient coming into the DOT clinics will be presenting with pulmonary tuberculosis. However localized or disseminated it may be, as chronic respiratory symptoms were the most common reasons people sought expert care prior to diagnosis [2]. The year with the highest prevalence in those presenting with Pulmonary TB was 2017.

There was also a steady decline in the number of deaths from pulmonary TB over the years. This was visibly accompanied by an increase in the percentage of cured patients who were registered in the TB clinic. This goes to show that not only is TB having a less fatal outcome, there is also an increase in the probability of a good prognosis in those who are being treated for pulmonary tuberculosis (Figure 1).

The limitation of this study was in the number of years studied, no gender stratification and no age range distributions.

Conclusion

There is a positive shift in the pattern of pulmonary tuberculosis in Jos, Plateau state; Nigeria. There is a decline in the mount of TB deaths annually from 20.5% to 13. 5% between 2016 and 2018, respectively. Also, there was a palpable an increase in the amount of TB cure rates 27.5 to 41.9% between 2016 and 2018, respectively. Though there was a noticeable decline in the number of patients who were presenting with to the DOT clinics being studied, the percentage incidence of pulmonary Tuberculosis itself was not on a decline.

Abbreviations

DOT: Directly Observed Treatment
TB: Tuberculosis
PTB: Pulmonary Tuberculosis
WHO: World Health Organization

Conflict of interest

The Author declares no conflict of interest in this study.

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