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Original Research Article

Patients' perception of quality of tuberculosis healthcare service in South West Nigeria

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ABSTRACT

Background: Nigeria has the highest burden of tuberculosis (TB) in Africa and is among the 14 countries in all the 3 world health organization global high-burden countries for TB, TB/HIV and MDR-TB. The aim of this study was to assess patients' perception of the quality of TB healthcare in Southwest Nigeria
Methods: The study utilized the cross-sectional design, and data was collected from drug-sensitive TB clients receiving care at health facilities providing TB healthcare services
Results: The average time clients spent to get to TB facilities from home was 23 minutes, the average waiting time was 6.7 minutes, and the average medical visit time was 17 minutes. Sixty-seven percent of respondents strongly agreed that doctors explained medical test result with them and 68.7% strongly agree that they wanted the medical doctors to spend more time with them. The mean score for convenience of accessing drugs was 4.8±0.5 mins, mean score for convenience of accessing laboratory test was 4.7±0.6 mins and mean score for convenience of accessing chest x-ray was 3.8±1.4 mins. Overall, the quality of TB care was perceived to be good.
Conclusions: Overall, the quality of TB services is very good from the perspectives of the patient, however, there is need to improve integrated patient-centered TB healthcare services by medical doctors. In addition, access to chest x-ray services should be improved to enhance quality of TB services.

Keywords: Quality of TB care, Waiting time, TB facility, Patient satisfaction

INTRODUCTION

Tuberculosis (TB) caused by the bacillus *Mycobacterium tuberculosis* is a communicable disease. It is a major cause of ill health and until the advent of coronavirus (COVID-19) pandemic, the leading cause of death from a single infectious agent, ranking above HIV/AIDS and now the 13th leading cause of the death worldwide.[1]

Globally in 2021, an estimated 10.6 million people became ill with TB, out of which 6.0 million were men, 3.4 million were women and 1.2 million were children. A total of 1.6 million people died from TB in the same year. Eight countries accounted for 68% of the total burden: India, China, Indonesia, Philippines, Pakistan, Nigeria, Bangladesh, and the Democratic Republic of Congo. Likewise, 30 leading high TB burden countries accounted for 87% of new TB cases in 2021, with 8 of them

accounting for more than two-thirds of the global total: India (28%), Indonesia (9.2%), China (7.4%), the Philippines (7.0%), Pakistan (5.8%), Nigeria (4.4%), Bangladesh (3.6%) and the Democratic Republic of the Congo (2.9%).[2] TB is curable and preventable, with about 85% of people who develop TB disease successfully treated with a 4-6-month drug regimen.[1]

TB incidence is falling with a cumulative reduction of 10%, about half of the WHO End TB strategy: 2025 milestone of 50% reduction between 2015 and 2025. Also, 5.9% reduction in the number of TB deaths from 2015-2021 was achieved as against the target of 75% reduction by 2025, while 48% of people with TB faced catastrophic costs as against target of zero by 2025. An estimated 74 million lives were saved through TB diagnosis and treatment between 2000 and 2021. Multidrug-resistant TB (MDR-TB) remains a public health crisis and a health security threat, with only about one in three people with drug-resistant TB that accessed treatment in 2021.[2] However, the number of people provided with treatment for MDR-TB dropped from 181,533 in 2019 to 161746 in 2020 which was a 10.8% decline from the figure in 2019, a most obvious impact on TB of disruptions caused by the COVID-19 pandemic.[1]

Nigeria's estimated TB burden in 2021 was 467,000 (219 per 100,000 population). However, only 204,725 new TB cases were reported to the national TB program (NTP), with 5.9% of them co-infected with HIV. About 125,000 people died from TB in 2021 and of the 15,000 estimated cases of MDR-TB, only 2,975 cases were detected and 2,197 started on treatment for MDR-TB.[1] Nigeria has the highest burden of TB in Africa and is ranked 7th among the 30 TB high burden countries globally and is also among the 14 countries that are in all the three WHO global high-burden country lists for TB, TB/HIV and MDR-TB and is among the eight countries that accounted for two thirds of the global TB burden accounting for 4.4% of the total global burden.[1,2] The goal of the national TB control programme is to achieve a 50% reduction in TB prevalence rate and 75% reduction in TB mortality (excluding HIV-related TB) rate in Nigeria compared to 2013 figures by 2025.[3]

According to records from the Osun State TB control programme, the annual estimated TB burden in Osun State was 7,084 in 2020, out of which 6,700 were detected. In 2021, 7,084 cases were estimated, however, 14,988 were detected, an increase of 212%. There was a decline in case detection from 47% in 2017 to 43% in 2018. This increased to 50% in 2019 and then 95% in 2020. DOT site coverage is 53% (581/1091) of health facilities. There are 86 health facilities providing acid-fast bacilli (AFB) sputum smear microscopy services, 12 GeneXpert MTB-Rif machines located in 11 LGAs and one MDRTB 10 bed ward.

There is a high prevalence of TB in Osun State. A study in 2010 reported a prevalence of 25%.[4] A similar study in 2020 reported prevalence of TB of 27.5%, prevalence of MDR-TB of 10.5% and prevalence of TB/HIV of 12.6%.[5] This reported prevalence of MDR-TB in Osun State is higher than the national prevalence of MDR-TB of the 5.2%.[6]

According to the world health organization, between 5.7 and 8.4 million deaths are attributed to poor quality care each year in low- and middle-income countries (LMICs), representing up to 15% of overall deaths in these countries. Sixty percent of deaths in LMICs from conditions requiring health care occur due to poor quality care, whereas the remaining deaths result from poor coverage of health services.[7]

This study will help to determine the quality of TB services in Osun State. Poor coverage and poor quality of services are associated with poor outcomes. Therefore, this study's findings will help us improve TB services outcome by addressing quality. This will improve treatment outcomes, reduce burden/ prevalence of TB disease, reduce drug resistance, and reduce TB related mortality. It will also lead to improved life expectancy among TB clients and achievement of the end TB strategy targets by 2025 and the sustainable development goal target to end TB by 2030.

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes.[8] There are several ways to measure the quality of care in health services. The model underpinning this study is the six-domain model developed by the institute of medicine.[9] The model consists of six elements of quality of care comprising of patient safety (whether the risks of injury are minimal for patients in the health system), effectiveness (whether the care provided is scientifically sound and neither underused nor overused), patient centeredness (whether patient care being provided is in a way that is respectful and responsive to a patient's preferences, needs, and values and are patient values guiding clinical decisions), Timeliness (whether delays and waiting times are minimized), Efficiency (whether waste of equipment, supplies, ideas, and energy are minimized) and equity (whether care is consistent across gender, ethnic, geographic and socioeconomic lines).

The aim of this study is to assess the patient's perception of the quality of TB services in TB service delivery points in Osun State.

The specific objectives of this study are to determine patients' perceived level of accessibility to TB service facilities, waiting time at TB facilities, medical visit time at TB facilities, level of practice of patient's centeredness by service providers at TB facilities, convenience to access of services at TB facilities and level of association between patient's perception of quality and service characteristics.

METHODS

The descriptive cross-sectional design was utilized to assess patient's perception of quality of TB services in Osun State.

Male and female TB clients 18 years and above with drug sensitive TB currently on treatment or have been on treatment for at least 4 weeks at selected facilities in Osun State were eligible for the study. Non-TB clients and TB clients not currently on treatment or not on treatment for at least 4 weeks were excluded.

The study site, Osun State covers a total landmass of about 12,820 square kilometers in Nigeria and is located within latitude 6.55^0 and 8.10^0 North and longitude 3.55^0 and 5.05^0 East. The State is divided into three federal senatorial districts each of which is composed of 10 local government areas (LGA) making a total of 30 LGAs with a projected 2016 population of 4,705,600.[10]

There are 1,093 health facilities in Osun State, of which 1,033 are primary health care facilities, 60 are secondary health care facilities and two are tertiary health care facilities. Out of 1,033 primary health care facilities, 678 are public owned while private providers own the remaining 353. At the secondary health care level, 54 of the 60 secondary health facilities are public owned while six are privately owned. The two tertiary health facilities in the State are public owned.

The sample size was calculated utilizing the Taro Yamane's formula given by $n=N/(1+Ne^2)$. The 2018 case findings for TB in the 30 LGAs of Osun State according to Osun State TB control programme of 3,568 was used as population size while margin of error of 5% and 95% confidence level were utilized in a minimum sample size of 360. However, a total sample of 425 was utilized to account for anticipated non-response.

The study utilized mixed sampling method in three stages. In the first stage, 12 TB high burden LGAs were selected purposively out of 14 high burden LGAs. In the second stage, six health facilities with high TB client load were purposively selected from each LGA, comprising of 2 private and 4 public health facilities to make a total of 72 facilities. In 3rd stage, 5-6 patients were conveniently selected per facility to make a total of 425 respondents.

The data collection instrument (questionnaire) was adapted from the USAID developed questionnaire for TB service assessment (QTSA). The adapted questionnaire was pretested in 5 health facilities in selected LGAs to ensure it captured the constructs of the study adequately and that it was easy for comprehension and clear in its meanings. Necessary modifications were made based on the outcome of the pre-test. The Cohen's Kappa Scores for inter examiner reliability was 0.76 and above.

Data was sourced from the baseline evaluation of domestic resource mobilization project carried out from March, 2021 to May 2021, to obtain information on the current state of TB intervention at the facility level and the experience of TB patients in accessing TB care and treatment services in Osun State, prior to project intervention. The survey was conducted through the use of interviewer-administered questionnaires. This was done on a mobile device using a Computer Assisted Person Interview (CAPI) tool. The questionnaire comprised of three sections: Facility Assessment section, Health Care Provider interview section and Patient Satisfaction Surveys section. Data from patient satisfaction surveys section was utilized for this study.

Data analysis was carried with SPSS version 23 and Microsoft excel 2019. Descriptive and inferential statistical analysis were carried out using frequency tables, charts and chi square tests.

Ethical approval for the study was obtained from the institutional review board of the Osun State ministry of health and informed consent was obtained from respondents before administration of questionnaire.

RESULTS

A total of 425 patients with drug sensitive TB were recruited into the study. Mean age of respondents was 46.18 years with standard deviation ±19.27 years.

There were slightly more female (52.7%) respondents than male respondents (47.3%).

More than half (59.8%) of respondents were Muslims, while 40% of them were Christians. A moderate proportion (63.8%) of respondents was married while 18.6% were single. Majority (98.4%) of the respondents were Yoruba. The commonest occupation was sales and services (24.7%) followed by skilled manual workers (22.4%). Most (92.2%) of the respondents reside in Osun state and nearly all (99.3%) of them were of Osun state origin (Table 1).

Table 1: Distribution of respondents by socio-demographic characteristics.

Demographic characteristics	Variables	Frequency	Percentage (%)
Gender	Male	201	47.3
	Female	224	52.7
Religion	Christianity	170	40
	Islam	254	59.8
	Others	1	0.2

Continued.

Demographic characteristics	Variables	Frequency	Percentage (%)
Marital status	Married	271	63.8
	Single	79	18.6
	Widowed	67	15.8
	Divorce	7	1.6
	Child	1	0.2
Occupation	Agriculture	74	17.4
	Clerical	3	0.7
	Housewife	7	1.6
	Professional/Technical/Managerial	28	6.6
	Sales and Services	105	24.7
	Skilled Manual Worker	95	22.4
	Student	30	7.1
	Unemployed	25	5.9
	Unskilled Manual Worker	42	9.9
	Others	16	3.8
Ethnicity	Yoruba	418	98.4
	Igala	1	0.2
	Okenu	1	0.2
	Hausa	2	0.5
	Urobo	1	0.2
	Igbo	1	0.2
	Akoko-edo	1	0.2

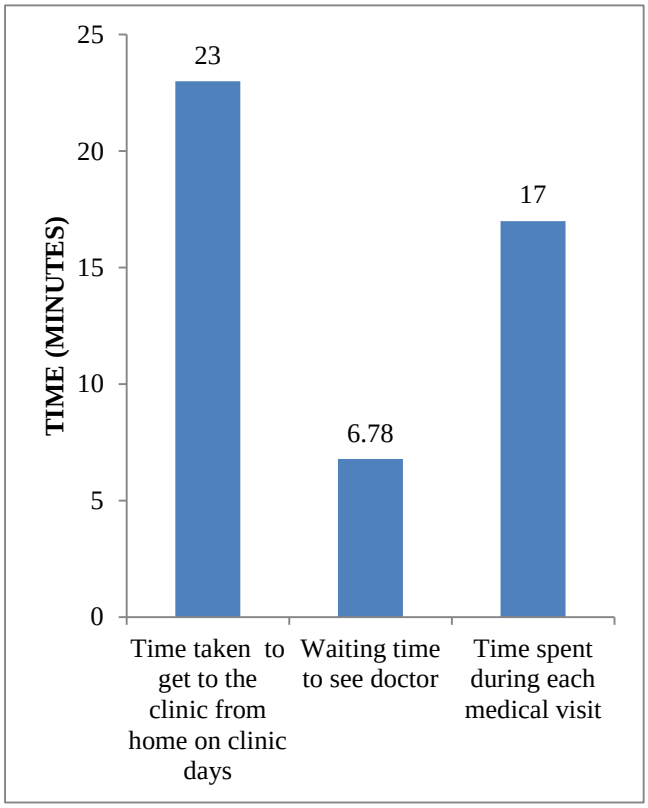

Figure 1: Average duration of access, waiting and medical visit time.

The average time spent by client from home to TB Facility was 23 minutes. Clients have to wait an average of 6.78 minutes before seeing the doctor while it took an average of 17 min spent on each medical visit (Figure 1).

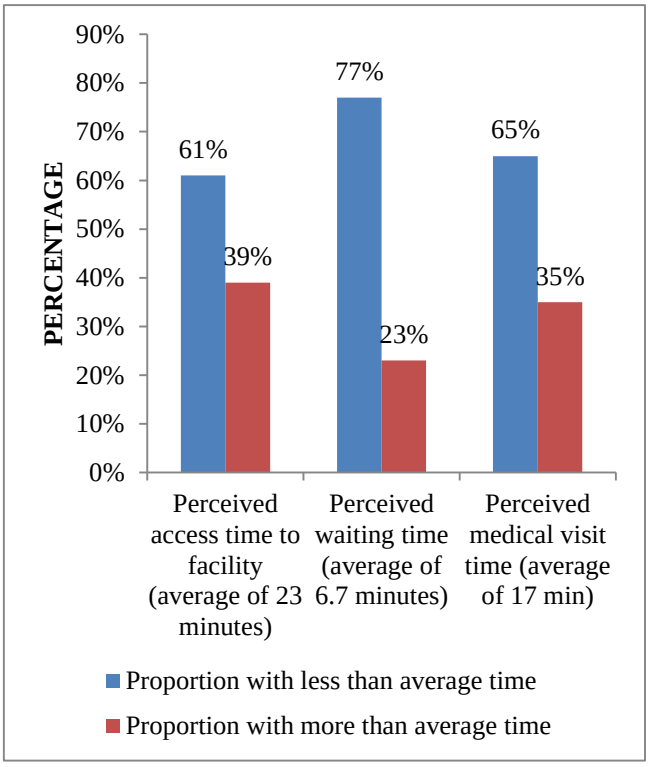

Figure 2: Access, waiting and visit times more than and below average.

A moderate proportion (61%) of respondents spent less than and equal to 23 minutes from home to health facility, 77% of respondents waited an average of 6.7 minutes or less to see the doctor while 65% of respondents spent an average of 17 minutes or less on medical visit (Figure 2).

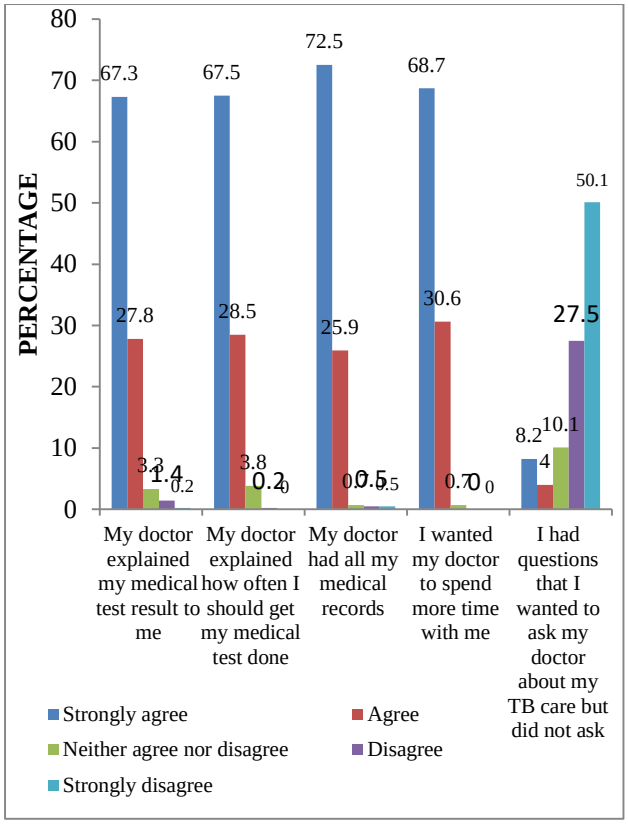

Figure 3: Perceived quality of TB care provided by medical doctors.

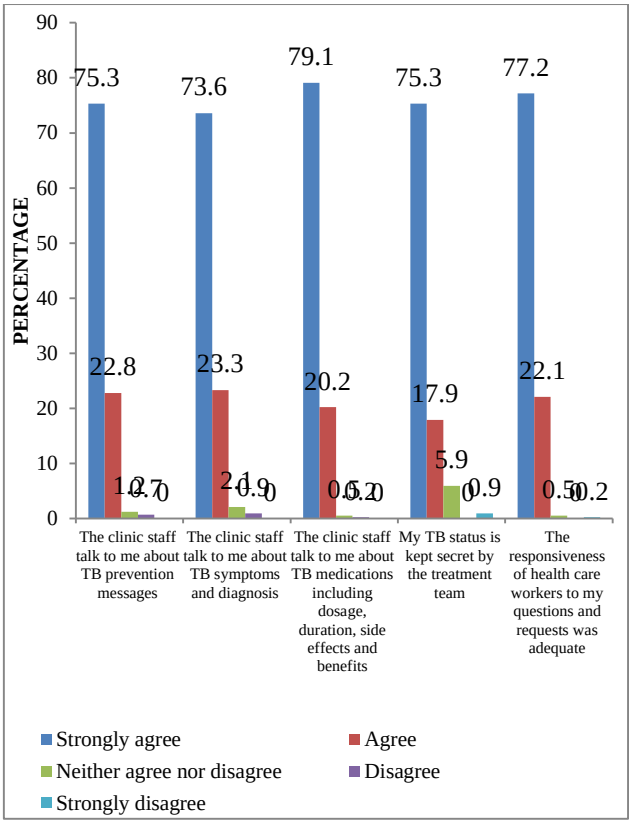

Figure 4: Perceived quality of TB care provided by clinic staff.

A major bulk (67.3%) of respondents strongly agree that medical doctors explained medical test result with them, 67.5% strongly agree the medical doctors explained how often they should get medical test done, 72.5% strongly agree that the medical doctors had all their medical records, 68.7% strongly agree that they wanted the medical doctors to spend more time with them and only 8.2% had questions they wanted to ask the medical doctors but did not ask (Figure 3).

Most (75.3%) respondents strongly agree that clinic staff talk to them about TB prevention messages, 73.6% strongly agree that clinic staff talk to them about TB symptoms and diagnosis, 79.1% strongly agree that clinic staff talk about TB medication including dosage, duration, side effects and benefits, 75.3% strongly agree that their TB status was kept secret by treatment team and 77.2% strongly agree that responsiveness of health workers to their questions and requests were adequate (Figure 4).

The range of score for convenience of accessing drugs was 1-5, with mean score of 4.8 and standard deviation ±0.5 and the range of score for convenience of accessing laboratory test was 1-5 with mean score of 4.7 and standard deviation ±0.6 while the range of score for convenience of chest X-ray was 1-5 had the lowest mean score of 3.8 with standard deviation ±1.4.

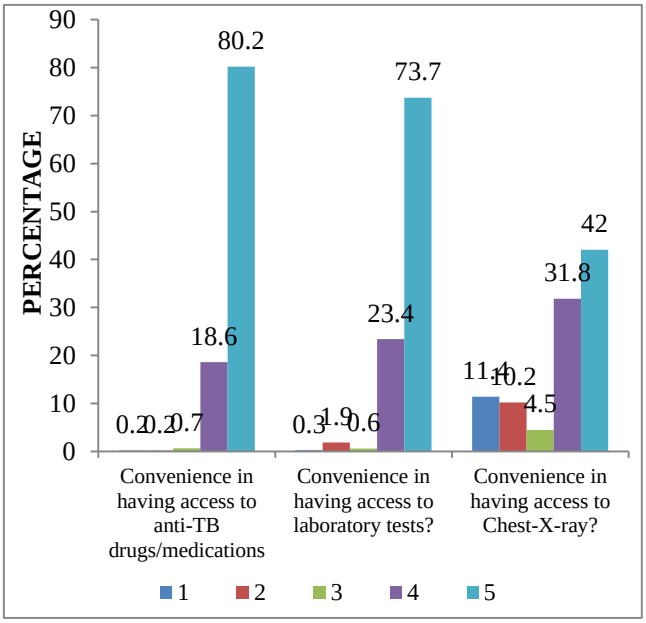

Figure 5: Perceived convenience of access to drugs, laboratory tests and chest X-ray (Rating 1-5).

Majority (80%) of respondents had highest level of convenience of accessing anti-TB drug, 73.7% had highest level of convenience of accessing of laboratory test while only 42% had highest level of convenience of accessing chest-X ray (Figure 5).

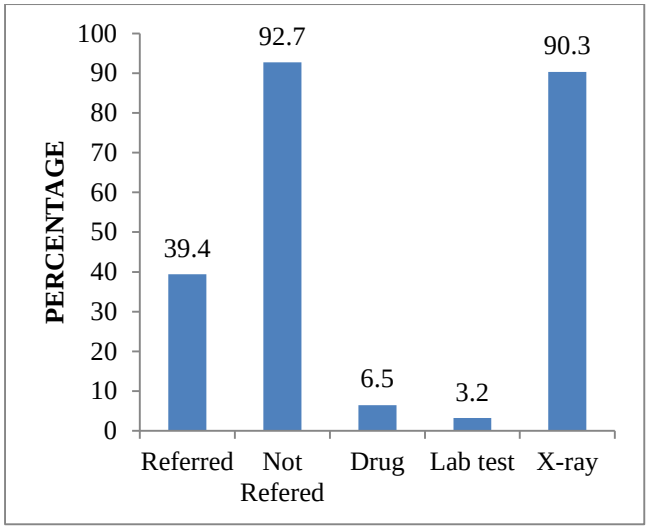

Figure 6: Perceived level of referral and type of TB services provided outside TB facility.

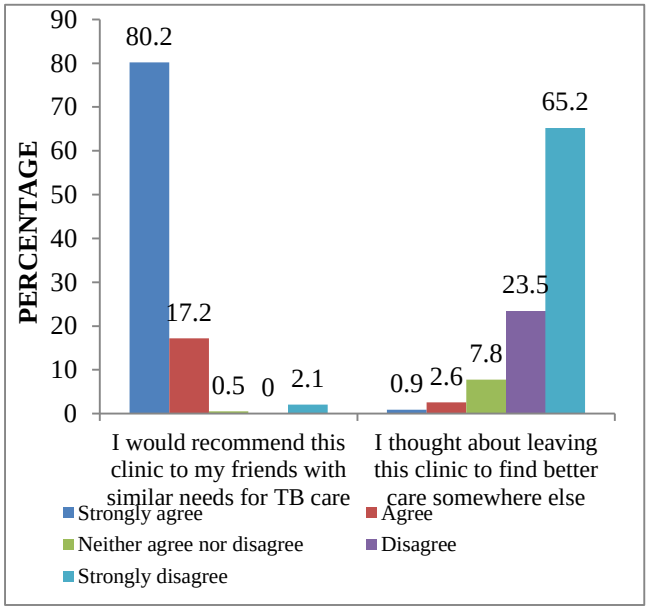

Figure 7: Perceived level of satisfaction with TB services.

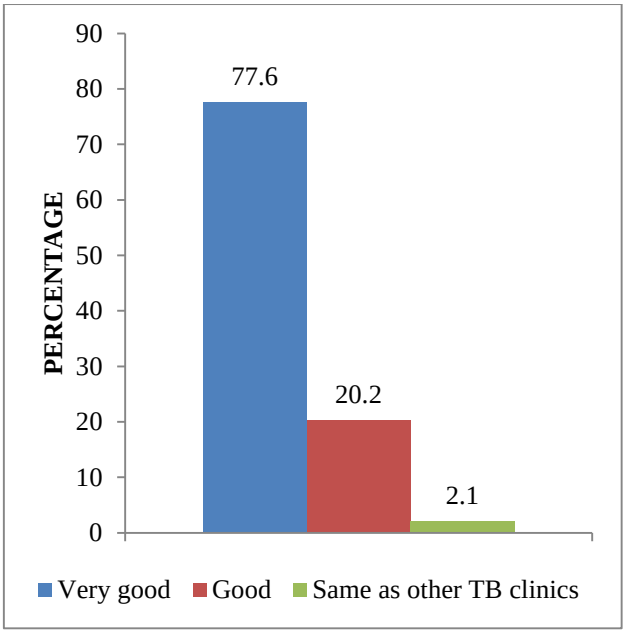

Figure 8: Perceived overall quality of care provided by TB clinic.

A high proportion (92.7%) of respondents were not referred for other TB services while 90.3% of clients were referred for Chest X-ray (Figure 6).

Perceived adequacy of responsiveness of health care workers is associated with confidence in getting medical care needed without financial set back (satisfaction with care) (p=0.001).

Most (80%) respondents strongly agree that they would recommend the clinic to friends with similar need for TB care while only 0.9% strongly agreed about leaving the clinic to find better care somewhere else (Figure 7).

Majority (77.6%) of respondents reported that the quality of care of TB clinic was very good while 20.2% reported that the quality of care of TB clinic was good and 2.1% reported that the quality of care of TB clinic was same as other TB clinic (Figure 8).

Table 2: Association between satisfaction with care and TB care services.

Income variable	Outcome variable	Confidence to get medical care needed without financial set back		P value
		Yes	No	
Adequate responsiveness of health care workers	**Agree**	378	44	0.001
	Undecided	0	2	
	Disagree	0	1	

DISCUSSION

This study showed that most (61%) of respondents spent less than 23 minutes to get to the health facility from home while few (31%) of respondents spent more than twenty-three minutes to get to the health facility from home. This finding infers good accessibility of clients to the TB facility. The finding is similar to the result in a study in Ethiopia where the 30.6 percentages of the patients spent ≥ forty minutes to get to the health institution.[11]

Most respondents (77%) waited for less than 6.7 minutes to see the doctor, while only 23% waited for more than 6.7 minutes. This observation means optimal waiting time for clients attending TB facility. A moderate (47.9%) proportion of TB clients with similar wait times were also reported in the study in Ethiopia. In contrast, a high proportion (91.8%) was reported in a study in Nigeria while another reported 67.6%. [11,12,13]

A good proportion (65%) of respondents spent less than 17 minutes on medical visit while only 35% spent more than 17 minutes on medical visit. This result deduces poor medical visit time, meaning that TB clients may not have sufficient time to spend with health providers to attend to their complaints. The finding is similar to 12.7% reporting sufficient time to discuss with health care providers in another study.[13] However, it is in contrast to the findings in the study where 87% of the patients perceived that they had sufficient time spent with the health care provider and another study where 96.5% of respondents had sufficient staff time.[11,12]

A major bulk (67%) of respondents strongly agree that the medical doctors explained medical test result with them. In comparison, 67.5% strongly agree that the medical doctors explained how often they should get medical test done and 72.5% strongly agree that the medical doctor had all their medical records. Still, a few (8.2%) strongly agree that they wanted to ask their medical doctor questions but did not ask while 68.7% strongly agree that they wanted the medical doctor to spend more time with them. These findings connote sub-optimal practice of patient centeredness by the medical doctors with TB clients unable to ask questions and desirous that medical doctors spend more time with patients. This result aligns with earlier findings in this study revealing insufficient medical visit time The finding that 67% reported that medical doctors explained medical test result with clients is similar to the results of a study that reported that 97.4% received good explanation of the condition.[12]

A high proportion (75.3%) of respondents strongly agree that clinic staff talked to them about TB prevention messages. 73.6% strongly agree that clinic staff talk to them about TB symptoms and diagnosis 79.1% strongly agree that clinic staff talk about TB medication, including dosage duration, side effects, and benefits, 75.3% strongly agree that their TB status was kept secret by treatment team. 77.2% strongly agree that the responsiveness of health workers to their questions and requests were adequate. These observations mean good practice of patient centeredness by the clinic staff which infers good quality of TB care provided by clinic staff. The findings are similar to the study in Ethiopia which reported that 73.1% were satisfied with communication and relationship with the health care provider.[14] This is in contrast with the finding in another study which reported that 47.7% perceived the care by the health care provider to be of medium quality.[11]

Our study confirmed high rate of convenience in accessing anti-TB drugs (average score of 4.8 out of 5), high rate of convenience in accessing laboratory test (average score of 4.7 out of 5) but a moderate rate of the convenience of accessing of chest-X ray (average score of 3.8 out of 5). This finding means that the quality of provision TB service in health facility is optimal except for chest X-ray services which is sub-optimal.

A major proportion (80.2%) of respondents strongly agree that they would recommend the clinic to friends with a similar need for TB care. In comparison, only a low 0.9% strongly agree about leaving the clinic to find better care elsewhere. This observation concludes that satisfaction with TB Services in Osun State is very good. This observation is similar to findings in another study which reported that 73.8% perceived the overall level of TB patients' satisfaction with the TB treatment services. The study in South Ethiopia reported that 90% of participants were satisfied with the TB treatment service.[11,15]

This study confirmed an association between confidence in getting medical care needed without financial set back) and adequate responsiveness of health care workers ($p=0.001$). This finding means that characteristics of health workers such as responsiveness, is an important predictor of satisfaction with TB care.

The limitation to this study is the use of non-probability sampling, meaning, therefore, that generalizing findings to other populations should be done with caution.

CONCLUSIONS

The study shows good access to TB facilities and optimal waiting time at TB facilities while time duration for medical visit is insufficient. It also revealed good patient-centered care provided by clinic staff but sub-optimal patient-centered care provided by medical doctors.

The convenience of access of TB clients to anti-TB drugs and laboratory services were optimal while the convenience of access to chest X-rays was sub-optimal.

Satisfaction with TB services and overall quality of care of TB clinic were perceived to be good.

The practice of patients' centered care is statistically significantly associated with satisfaction with care There is, therefore, a need to enhance medical visit time, sensitize medical doctors to strengthen patient-centered care and increase access to chest X-ray services to improve TB care quality, TB services utilization and TB care outcomes.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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