

Patient Health Seeking Behavior and Choice of Place of Care among Tuberculosis Clients in Selected States in Nigeria

Bethrand Odume^{1*}, Aminu Babayi¹, Ogoamaka Chukwuogo¹, Chidubem Ogbudebe¹, Elias Aniwada², Egwuma Efo³, Degu Dare³, Useni Sani¹, Nkiru Nwokoye¹, Emperor Ubochioma⁴, Obioma-Chijioke Akaniro⁴, Debby Nongo⁵, Rupert Eneogu⁵, Temitayo Lagundoye-Odusote⁵, Chukwuma Anyaike⁴

¹Technical and Programs Department, KNCV Nigeria, Abuja, Nigeria

²Department of Community Medicine, Faculty of Medical Sciences, University of Nigeria, Enugu Campus, Enugu, Nigeria

³Technical Department, KNCV Tuberculosis Fund, The Hague, Netherlands

⁴The Programs and Coordination Department, National Tuberculosis, Leprosy & Buruli Control Program, Abuja, Nigeria

⁵Program Management Department, HIV/AIDS & TB Office, USAID/Nigeria, Abuja, Nigeria

Email: *bodume@kncvnigeria.org

How to cite this paper: Odume, B., Babayi, A., Chukwuogo, O., Ogbudebe, C., Aniwada, E., Efo, E., Dare, D., Sani, U., Nwokoye, N., Ubochioma, E., Akaniro, O.-C., Nongo, D., Eneogu, R., Lagundoye-Odusote, T. and Anyaike, C. (2023) Patient Health Seeking Behavior and Choice of Place of Care among Tuberculosis Clients in Selected States in Nigeria. *Journal of Tuberculosis Research*, 11, 149-161.

<https://doi.org/10.4236/jtr.2023.114015>

Received: November 6, 2023

Accepted: December 23, 2023

Published: December 26, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative

Commons Attribution International

License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: Tuberculosis (TB) remains a major global public health problem. Early detection and initiation of treatment shortens infectious period and is key to TB control. A considerable proportion of TB patients presenting with advanced symptoms suggests delay in seeking care. As TB control programs rely on passive case finding, TB care-seeking behavior is critical as undiagnosed cases act as reservoirs for transmission. This study assessed patient health seeking behavior and choice of place of care among TB patients in Nigeria. **Methods:** This was a pro-gramme implementation, facility-based cross-sectional study in 14 states, 92 facilities across three levels of care. Interviewer-administered semi-structured questionnaires were used. Information on personal characteristics and health seeking behavior was collected from June 2020 to December 2021. The analysis was based on the various healthcare providers where the respondents first sought care. Data analysis was done using IBM SPSS and summarized using frequency and percentages. Chi square test was used for associations of characteristics of patients and choice of place of care at $p < 0.05$. **Results:** In all 14 states, distribution of overall first place of seeking care for TB symptoms was: 7208 (75.8%) health facilities (range 57% to 88%), while 2294 (24.2%) visited other places including community pharmacist, patent medicine vendor, traditional/home, un-specified/ none. For Health facilities, the majority were at public facilities 6563 (69.1%) and private 641 (6.7%). Moreover, 6 states had >20% of respondents who first sought

care at PMVs, while 3 states (Delta, Imo, and Rivers) had 10% of respondents who first sought care at Community Pharmacist. **Conclusions:** Nearly a quarter of people with TB first sought care outside health facilities, suggesting the need to align availability of services with their needs.

Keywords

Patient Pathway Analysis, TB Patients, TB Treatment, Healthcare Facility

1. Introduction

Tuberculosis (TB) remains a major global public health problem including Nigeria. It has socio-economic implications as it mainly affects the economically viable age bracket of 18 - 35 [1]. Though significant progress has been made in the fight to curb TB, yet it remains a life-threatening disease, worsened by several challenges which include Multi-drug Resistant TB (MDR-TB), co-infection of TB and HIV, and TB among children [2]. TB is a disease of poverty which has a direct effect on health, and hence, the disease further limits access to healthcare services.

Early detection and initiation of treatment shortens infectious period and is key to TB control. Unless TB cases are identified and treated early and in greater numbers, morbidity, mortality, and drug resistance are expected to increase [3]. Patients with undiagnosed pulmonary TB predominantly act as reservoirs for transmission. Delay in the diagnosis may worsen the disease, increase chances of transmission of TB in the community, increase patient's expenditure on the disease [4]. Succinctly, a key challenge to TB control programs is ensuring that TB patients seek diagnosis in a timely manner and once diagnosed, adhere to treatment [5].

Patient delay in seeking health care and early diagnosis is a major problem in the management of TB in many settings in sub-Saharan Africa [6]. This is because the period before diagnosis and start of treatment is important since most disease transmissions occur during this time. Symptoms in the early stages of TB are constitutional and not very specific to TB. In most cases it is attributed to self-limiting illnesses, such as viral infections or other illnesses. It is only when symptoms become worse or persist that most people consult a health service. Symptom misinterpretation has been associated with patient delay in other studies internationally, where they are attributed to external causes such as over-work or exposure to cold [7] [8].

A considerable proportion of TB patients presenting with advanced symptoms suggests delay in seeking care [9] [10]. However, worthy of note is that precondition of health-seeking behavior is the recognition and interpretation of symptoms by the individuals affected and by those around them [11] [12]. Who is consulted once symptoms are recognized will depend on pre-existing beliefs about the likely meaning of the symptoms as well as the availability and accessi-

bility of the various potential sources of help (traditional, spiritual, western medicine or health facility) [11]. This availability of multiple sources of care, combined with uncertainty about TB symptoms, stigma, problems of access and affordability may further lead to considerable delays in health care seeking, diagnosis and treatment of TB [13].

The choice of service providers by TB patients determines how soon the spate of the disease will be curbed in Nigeria [14]. Nigeria has a mixed healthcare system in which both orthodox and traditional care providers operate side-by-side. A TB patient's choice of healthcare provider ranges among public hospitals, private hospitals, Pharmacy, Chemist store, and informal healthcare providers [14]. Healthcare consumers are, therefore, faced with various choices to use healthcare services. According to the literature, health seeking behavior and choice of a particular health care action is a dynamic process which is influenced by cultural, religious, sociodemographic, environmental, political, and other factors [15]. These factors shape the behavior of individual patients by influencing their perception about symptoms. The choice of healthcare provider chosen by the patient is essential for healthcare policymaking because to reduce the burden of TB there is a need to encourage more patients to utilize evidence-based care.

Despite the National TB program's impressive performance in terms of case detection and cure rates, the program has many challenges due to the different health seeking options and patterns. Also, as TB control programs rely on passive case finding, TB care-seeking behavior is critical as undiagnosed cases act as reservoirs for transmission. In view of the above, there was an obvious need to generate fresh evidence to inform the national TB program to design appropriate strategies and interventions to bring about a positive change in the current situation of ever-increasing TB cases through well informed health seeking behavior. This study assessed patient health seeking behavior and choice of place of care among Tuberculosis clients in Nigeria [2].

2. Methodology

This was a program implementation, facility based cross sectional study in 14 states of Nigeria (8 in northern regions and 6 in the southern regions), in a total of 92 facilities (53 in north and 39 in south regions). It involved all levels of health care (primary, secondary, and tertiary) in both public and private sectors. Interviewer administered; semi-structured questionnaires were used. Total study was done. Information on personal characteristics and health seeking behavior was collected from June 2020 to December 2021 by trained research assistants (health workers at facilities, ad hoc staff, and volunteer workers of KNCV Nigeria). For people that could not respond to the questions, their caregivers were interviewed. Data was collected on paper forms, collated, entered, and cleaned using Microsoft Excel. The analysis was done using IBM SPSS version 25. All data is presented in numbers and percentages. Cross tabulations were done using Pearson Chi square for associations of demographic characteristics with

choice of place of care. The Tableau software was used for easy visualization and interpretation. Analysis was based on where respondents first sought care when they experienced TB symptoms. Ethical clearance was obtained from the National Research and Ethics Committee (NHREC Approval Number NHREC/01/01/2007-08/01/2021; on the 08th of January 2021). Written informed consent, confidentiality, voluntary participation, and permission from appropriate authorities were observed where and when necessary. For this study, Community Pharmacist, Patent Medicine Vendor, Traditional/Home, Unspecified/none were grouped as others/informal facilities. Both public and private hospitals make up the health facilities (**Figure 1**).

3. Results

Table 1 shows socio-demographics of patients. Most patients were aged 15 to 40 years 5319 (56.0%) followed by those aged above 40 years 3623 (38.1%). Those aged 14 years and below were 556 (5.9%). Their mean age was 35.6 years with standard deviation of 12.8. Males were more than females 5454 (57.4%) and 4044 (42.6%) respectively. Most patients had secondary education 3810 (40.1%) followed similarly by primary education 2227 (23.4%) and no formal education 2202 (23.2%). Those that had tertiary education were 1259 (13.3%). Their major occupation was trading 2195 (23.1%), skilled worker 1907 (20.1%) and civil/public servant 1004 (10.6%).

Table 2 shows distribution place of choice for health care. Most patients visited health facilities as their first choice of care 7208 (75.8%) while 2294 (24.2%) visited other places including community pharmacist, patent medicine vendor, traditional/home, unspecified/none. For Health facilities, the majority were at public facilities 6563 (69.1%) and private 641 (6.7%).

Table 3 shows distribution of choice of place of accessing health care for persons with features suggestive of TB. In all the states, the highest proportion of patients visited health facilities as their first choice of care with the highest being in Katsina 2344 (86.5%), Taraba 127 (84.7%), Nasarawa 451 (78.7%) and Kano 1339 (77.1%).

This was followed by Patent Medicine dealers and Majority were from Anambra 230 (28.7%), Akwa Ibom 26 (25.7%), Rivers 125 (23.5%) and Benue 17 (25.0%). The majority that visited Community Pharmacist were in Imo 48 (21.5%) and Delta 21 (18.4%). For traditional or home, it was <4% in all states with highest patronage in Delta 4 (3.5%) and Nasarawa 12 (2.1%).

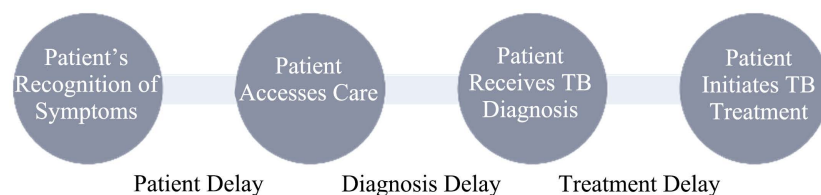


Figure 1. Patient care seeking behaviour along the care cascade.

Table 1. Socio-demographics of patients.

Age Categories (years)	n = 9498	Percent (100)
0 - 14	556	5.9
15 - 40	5319	56.0
>40	3623	38.1
Mean (SD)	35.6 (12.8)	
Gender		
Female	4044	42.6
Male	5454	57.4
Education level		
Informal	2202	23.2
Primary	2227	23.4
Secondary	3810	40.1
Tertiary	1259	13.3
Occupation		
Civil/public servant	1004	10.6
Trading	2195	23.1
Skilled worker	1907	20.1
Unemployed/HW/applicant	95	1.0
Pupil/student	216	2.3
Farmer	257	2.7
Others	3822	40.2

Table 2. Distribution place of choice for health care.

SECTOR	n = 9498	Percent (100)
Health Facility	7208	75.8
Others*	2294	24.2
Health Facility	7208	
<i>Public</i>	<i>6563</i>	<i>69.1</i>
<i>Private</i>	<i>641</i>	<i>6.7</i>
Others*	2294	24.2

Informal sector/others*: Community Pharmacist, Patent Medicine Vendor, Traditional/Home, Unspecified/none.

Table 4 shows association of characteristics of patients with choice of place of care. There were statistically significant association of age ($\chi^2 = 14.360$, $p = 0.001$) and occupation ($\chi^2 = 34.304$, $p = 0.001$) with choice of place of care. There were no association with gender ($\chi^2 = 0.656$, $p = 0.417$) and educational level ($\chi^2 = 1.536$, $p = 0.674$).

Table 3. Distribution of choice of place of accessing health care for persons with features suggestive of TB.

States	Place of first access to care					Total n (%)
	Health Facility n (%)	Community Pharmacist n (%)	Patent Medicine Vendor n (%)	Traditional drug/home n (%)	Unspecified/none n (%)	
Akwa Ibom	65 (64.4)	7 (6.9)	26 (25.7)	2 (2.0)	1 (1.0)	101 (1.1)
Anambra	501 (62.5)	34 (4.2)	230 (28.7)	12 (1.5)	25 (3.1)	802 (8.4)
Bauchi	388 (74.6)	25 (4.8)	100 (19.2)	7 (1.3)	0 (0.0)	520 (5.5)
Benue	43 (63.2)	6 (8.8)	17 (25.0)	1 (1.5)	1 (1.5)	68 (0.7)
Cross River	233 (67.3)	18 (5.2)	94 (27.2)	1 (0.3)	0 (0.0)	346 (3.6)
Delta	65 (57.2)	21 (18.4)	24 (21.1)	4 (3.5)	0 (0.0)	114 (1.2)
Imo	149 (66.8)	48 (21.5)	25 (11.2)	1 (0.4)	0 (0.0)	223 (2.3)
Kaduna	1012 (75.3)	104 (7.7)	197 (14.7)	23 (1.7)	8 (0.6)	1344 (14.2)
Kano	1339 (77.1)	37 (2.1)	334 (19.2)	24 (1.4)	2 (0.1)	1736 (18.3)
Katsina	2344 (86.5)	87 (3.2)	211 (7.8)	37 (1.4)	32 (1.2)	2711 (28.5)
Nasarawa	451 (78.7)	36 (6.3)	72 (12.6)	12 (2.1)	2 (0.3)	573 (6.0)
Plateau	235 (85.5)	16 (5.8)	19 (6.9)	5 (1.8)	0 (0.0)	275 (2.9)
Rivers	345 (64.7)	54 (10.1)	125 (23.5)	5 (0.9)	4 (0.8)	533 (5.6)
Taraba	127 (84.7)	4 (2.7)	16 (10.7)	0 (0.0)	3 (2.0)	150 (1.6)

Table 4. Association of characteristics of patients with Choice of place of care.

Variables	Choice of place of care		χ^2 (p value)
	Health facility (n = 7204)	Informal sector (n = 2294)	
	n (%)	n (%)	
Age Categories (years)			
0 - 14	458 (82.4)	98 (17.6)	14.360 (0.001)
15 - 40	3997 (75.1)	1322 (24.9)	
>40	2749 (75.9)	874 (24.1)	
Gender			
Female	3084 (76.3)	960 (23.7)	0.656 (0.417)
Male	4120 (75.5)	1334 (24.5)	
Education level			
Informal	1682 (76.4)	520 (23.6)	1.536 (0.674)
Primary	1692 (76.0)	535 (24.0)	
Secondary	2866 (75.2)	944 (24.6)	
Tertiary	964 (76.6)	295 (23.4)	

Continued

Occupation			
Civil/public servant	787 (78.4)	217 (21.6)	
Trading	1577 (71.8)	618 (28.2)	
Skilled worker	1423 (74.6)	484 (25.4)	34.304 (<0.001)
Unemployed/HW/applicant	72 (75.8)	23 (24.2)	
Pupil/student	171 (79.2)	45 (20.8)	
Farmer	195 (75.9)	62 (24.1)	
Others	2977 (77.9)	845 (22.1)	

Table 5 shows association of characteristics of patients with Choice of sector of health facility. There were statistically significant association of educational level ($\chi^2 = 55.978$, $p < 0.001$) and occupation ($\chi^2 = 45.251$, $p < 0.001$) with choice of sector of care. There were no association with gender ($\chi^2 = 0.090$, $p = 0.764$) and age ($\chi^2 = 5.560$, $p = 0.062$).

Figure 2 shows where patients with TB symptoms first sought care. About 6 states (Anambra, Akwa Ibom, Benue, Cross River, Delta, and Rivers) had >20% of respondents who first sought care at PMVs. while 3 states (Delta, Imo, and Rivers) had about 10% of respondents who first sought care at Community Pharmacist. The highest proportion of respondents - between 57% and 86.5% - in all 14 states first sought care for TB symptoms in health facilities. Less than 3.2% of respondents per state did not seek care in the health system but may have sought other forms of care not captured by the study, with the highest proportion of respondents in Anambra (3.1%). 50% of the states (Anambra, Akwa Ibom, Benue, Cross River, Delta, Imo, and Rivers) had the highest percentage (>20%) of respondents who first sought care in the informal sectors.

4. Discussion

This study documented that over three quarters of patients visited health facilities as their first choice of care. For Health facilities, the majority (over two thirds) were at public facilities. This observation is consistent with some and differs with other previous studies. In contrast to current findings previous study in the country documented that less than 40% of Nigerians patronize public health facilities, this, according to them, accounts for the untimely detection of TB in hospitals [16]. The difference with current study may be due to differences in scope of the study and approach used. The previous study was in one state while the current study was in fourteen states.

The health care seeking behavior of TB suspects varies from country to country and even within countries. In Ukraine, for instance, 88% of the respondents reported that they visited polyclinic or hospital as a primary choice [17]. Studies done in Pune India reported 83% and another in south-east Asia region documented 60% - 70% sought care initially at health facility [18] [19]. In Gambia,

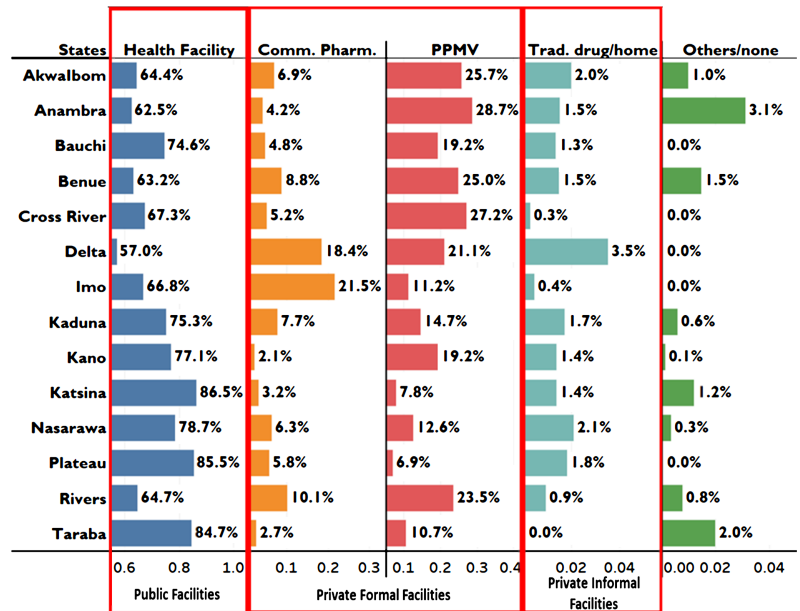


Figure 2. Highlighting where presumptive TB patients first access care.

Table 5. Association of characteristics of patients with Choice of sector of health facility.

Variables	Health facility		χ^2 (p value)
	Public (n = 6563)	Private (n = 641)	
	n (%)	n (%)	
Age Categories (years)			
0 - 14	422 (92.1)	36 (7.9)	5.560 (0.062)
15 - 40	3664 (91.7)	333 (8.3)	
>40	2477 (90.1)	272 (9.9)	
Gender			
Female	2806 (91.0)	278 (9.0)	0.090 (0.764)
Male	3757 (91.2)	363 (8.8)	
Education level			
Informal	1579 (93.9)	103 (6.1)	55.978 (<0.001)
Primary	1585 (93.7)	107 (6.3)	
Secondary	2551 (89.0)	315 (11.0)	
Tertiary	848 (88.0)	116 (12.0)	
Occupation			
Civil/public servant	702 (89.2)	85 (10.8)	45.251 (<0.001)
Trading	1388 (88.0)	189 (12.0)	
Skilled worker	1288 (90.5)	135 (9.5)	
Unemployed/HW/applicant	66 (91.7)	6 (8.3)	
Pupil/student	165 (96.5)	6 (3.5)	
Farmer	186 (95.4)	9 (4.6)	
Others	2766 (92.9)	211 (7.1)	

most people from the study population seek help from modern health institutions early [20]. In contrast, studies from South Sudan and Hong Kong reported lower figures of 17% and 42.6% respectively [21] [22]. Studies done in Ethiopia demonstrated that 60% and 60.9% of the respondents visited modern health institutions while 22% and 18% of the respondents sought traditional healers and took no action, respectively [15] [23]. Similarly, study done in an Urban District, South Africa reported that 32% sought treatment from informal providers, and 13.3% self-medicated even when over three-quarters walk to their local clinic [24].

In Northern India, 87% of the study participants reported that they had taken some kind of self-initiated action such as home remedies [25]. In another Indian study, 72% of respondents reported that they had consulted nonprofessional private healer [26]. Also, respondents from Uganda reported that they used self-treatment as a primary choice and visited health institutions when they became bedridden in most cases [27]. A qualitative study done in Kenya documented that most patients initially self-treated with herbal remedies or drugs purchased from kiosks or pharmacies before seeking professional care. Misinterpretation of early symptoms and financial constraints were the most common reasons reported for the delay [28].

The disparities in findings may be due to differences in geographic location between and even within countries or widely varied access barriers mostly due to inequity in distribution of health facilities. Other possible explanation for these discrepancies include; community awareness about tuberculosis which might not be uniform across districts, variation in socioeconomic and sociocultural variables which affect medical health care seeking behavior among districts and patients. Findings from assessment of the Contributions of Private Provider Engagement in Tuberculosis Case Finding and Notification in Southwest Nigeria documented that the PPMVs tend to contribute more to the overall number of presumptive TB cases than any other cadre of private providers and recommended that there are still opportunities for a scale up in the private provider engagement in states studied [29].

The low patronage of other places/informal sector of care reported in current study is good as they contribute to delay in accessing quality care, prolonged transmission of diseases and consequently hampers TB control. For instance, a study in Ebonyi State, Nigeria reported that practices toward presumptive TB clients among PPMVs were poor as shown in their inadequate referral of clients with persistent cough to DOTS facilities, prolonged treatment of clients with persistent cough with antibiotics which have anti TB activity and untimely poor referral of clients for diagnosis and treatment [30]. The PMVs lack knowledge about tuberculosis signs, symptoms and have possessive mode of operation of care service [31]. Persons with untreated sputum smear positive TB can infect 10 to 14 others in a year [32]. There is a need for symptomatic individuals to seek medical help early.

This current study documented that about half of the states had the highest percentage of respondents who first sought care in the private informal sectors. This is expected due to health system preferences in Nigeria. The states listed are all in the southern part of the country. Regional and urban-rural disparities exist regarding the utilization of private sector services. On average, private health facilities are concentrated in southern Nigeria, while public health facilities dominate service provision in the north [33].

Findings from this study documented a significant association of age and occupation with choice of place of care as well as educational level and occupation for choice of sector of health facility. This is in line with other previous studies. The identified associations may be due to widely varied patients' characteristics. For example, those aged 14 years are far less than other groups. This is equally prominent in occupation. Previous studies reported that education, age, and regions are critical determinants of a TB patient's choice of healthcare providers. More educated people were apt to seek professional treatment. Again, the study revealed that more patients utilize public hospitals than any other health service providers. The study recommended among other things for the creation of awareness on the best TB healthcare provider, improvement of private hospitals, as a way of curbing the high prevalence of the disease in the region [14]. Also, literature reveals that several factors can influence the choice of health service providers by patients. These factors operate at the individual, household, community, and health service levels. At the individual level, age, marital status, employment status, income, affordability of health care and education were reported as important factors that may influence where the sick go for treatment [14].

Early detection and treatment are crucial determinants of successful TB control. Reducing diagnostic delay as well as early initiation of treatment shortens the infectious period and improves treatment outcome, which will lead to a significant reduction in transmission of TB in the community [34]. As TB control programs rely on passive case finding, care-seeking behavior of TB patients is a critical factor for early diagnosis. Self-treatment involves a variety of home remedies, traditional and modern drugs. It is always the first step in the health seeking behavior process.

5. Conclusion

Over three quarters of persons with TB first sought care in health facilities, especially public facilities suggesting the need to align availability of services with their needs. The choice of healthcare provider chosen by the patient is essential for healthcare policy making because to reduce the burden of TB, there is a need to encourage more patients to utilize evidence-based care.

Acknowledgements

KNCV Nigeria expresses her profound gratitude to the United States Agency for

International Development (USAID), the funder of Tuberculosis Local Organizations Network (TB-LON), Regions 1 & 2 project. We also thank the National Tuberculosis, Leprosy and Buruli Ulcer Control Program, and the State TB programs for the coordination and leadership role that ensured the commitment of implementing facilities throughout the research duration. We are grateful to our colleagues from KNCV Tuberculosis Foundation Netherlands for providing technical support in the study concept development, protocol design and analyses of results.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Federal Government of Nigeria (2012) Report of the First National TB Prevalence Survey 2012.
- [2] Adolphus, I. and Abebe, F. (2012) Assessment of Defaulting from Directly Observed Treatment Short Courses and Its Determinants in Benin City. *Journal of Tuberculosis Research*, **2**, 30-39.
- [3] Ford, C.M., Bayer, A.M., Gilman, R.H., Onifade, D., Acosta, C., Cabrera, L., Vidal, C. and Evans, C.A. (2009) Factors Associated with Delayed Tuberculosis Test-Seeking Behavior in the Peruvian Amazon. *The American Journal of Tropical Medicine and Hygiene*, **81**, 1097-1102. <https://doi.org/10.4269/ajtmh.2009.08-0627>
- [4] Paramasivam, S., Thomas, B., Thayyil, J., Rahim, A., Thavody, J., Lilabi, M.P. and Jayadev, V.K. (2016) Knowledge and Health Seeking Behaviour of Tuberculosis Patients in Kerala. *International Journal of Community Medicine and Public Health*, **3**, 2464-2471. <https://doi.org/10.18203/2394-6040.ijcmph20163055>
- [5] Khan, A., Shaikh, B.T. and Baig, M.A. (2020) Knowledge, Awareness, and Health-Seeking Behaviour Regarding Tuberculosis in a Rural District of Khyber Pakhtunkhwa, Pakistan. *Biomed Research International*, **2020**, Article ID: 1850541. <https://doi.org/10.1155/2020/1850541>
- [6] Asres, M., Gedefaw, M., Kahsay, A. and Weldu, Y. (2017) Patients' Delay in Seeking Health Care for Tuberculosis Diagnosis in East Gojjam Zone, Northwest Ethiopia. *The American Journal of Tropical Medicine and Hygiene*, **96**, 1071-1075. <https://doi.org/10.4269/ajtmh.16-0892>
- [7] Wandwalo, E.R. and Morkve, O. (2000) Delay in Tuberculosis Case-Finding and Treatment in Mwanza, Tanzania. *The International Journal of Tuberculosis and Lung Disease*, **4**, 133-138. <https://pubmed.ncbi.nlm.nih.gov/10694091/>
- [8] Lambert, M.L. and Van der Stuyft, P. (2005) Editorial: Delays to Tuberculosis Treatment: Shall We Continue to Blame the Victim? *Tropical Medicine & International Health*, **10**, 945-946. <https://doi.org/10.1111/j.1365-3156.2005.01485.x>
- [9] Chanda-Kapata, P., Kapata, N., Masiye, F., Maboshe, M., Klinkenberg, E., Cobelens, F. and Grobusch, M.P. (2016) Health Seeking Behaviour among Individuals with Presumptive Tuberculosis in Zambia. *PLOS ONE*, **11**, e0163975. <https://doi.org/10.1371/journal.pone.0163975>
- [10] Gamtesa, D.F., Tola, H.H., Mehamed, Z., Tesfaye, E. and Alemu, A. (2020) Health Care Seeking Behavior among Presumptive Tuberculosis Patients in Ethiopia: A

- Systematic Review and Meta-Analysis. *BMC Health Services Research*, **20**, Article No. 445. <https://doi.org/10.1186/s12913-020-05284-5>
- [11] Ward, H., Mertens, T.E. and Thomas, C. (1997) Health Seeking Behaviour and the Control of Sexually Transmitted Disease. *Health Policy and Planning*, **12**, 19-28. <https://doi.org/10.1093/heapol/12.1.19>
- [12] Calnan, M. (1988) Towards a Conceptual Framework of Lay Evaluation of Health Care. *Social Science & Medicine*, **27**, 927-933. [https://doi.org/10.1016/0277-9536\(88\)90283-3](https://doi.org/10.1016/0277-9536(88)90283-3)
- [13] Rubel, A.L. and Garo, L.C. (1992) Social and Cultural Factors in the Successful Control of Tuberculosis. *Public Health Reports*, **107**, 626-636. <https://pubmed.ncbi.nlm.nih.gov/1454974/>
- [14] Rolle, R.A. and Onwuma, O.C. (2020) Determinants of Choice of Treatment by Tuberculosis Patients in Nigeria. *Amity Journal of Healthcare Management*, **4**, 1-14. https://www.researchgate.net/publication/338158865_Determinants_of_Choice_of_Treatment_by_Tuberculosis_Patients_in_Nigeria
- [15] Yimer, S., Holm-Hansen, C., Yimaldu, T. and Bjune G. (2009) Health Care Seeking among Pulmonary Tuberculosis Suspects and Patients in Rural Ethiopia: A Community-Based Study. *BMC Public Health*, **9**, Article No. 454. <https://doi.org/10.1186/1471-2458-9-454>
- [16] Orubuloye, I.O. and Ajakaiye, D.O.I. (2022) Health Seeking Behaviours in Nigeria. Nigerian Institute of Social and Economic Research, Central Bank of Nigeria Library. <http://library.cbn.gov.ng:8088/cgi-bin/koha/opac-detail.pl?biblionumber=4341>
- [17] van der Werf, M.J., Chechulin, Y., Yegorova, O.B., Marcinuk, T., Stopolyanskiy, A., Voloschuk, V., Zlobinec, M., Vassall, A., Veen, J., Hasker, E. and Turchenko, L.V. (2006) Health Care Seeking Behaviour for Tuberculosis Symptoms in Kiev City, Ukraine. *The International Journal of Tuberculosis and Lung Disease*, **10**, 390-395. <https://pubmed.ncbi.nlm.nih.gov/16602402/>
- [18] Kelkar-Khambete, A., Kielmann, K., Pawar, S., Inamdar, V., Datye, A. and Rangan, S. (2008) India's Revised National Tuberculosis Control Programme: Looking beyond Detection and Cure. *The International Journal of Tuberculosis and Lung Disease*, **12**, 87-92. <https://pubmed.ncbi.nlm.nih.gov/18173883/>
- [19] Nair, N., Wares, F. and Sahu, S. (2010) Tuberculosis in the WHO South-East Asia Region. *Bulletin of the World Health Organization*, **88**, 164-165. <https://doi.org/10.2471/BLT.09.073874>
- [20] Kasse, Y., Jasseh, M., Corrah, T., Donkor, S.A., Antonnio, M., Jallow, A., Adegbola, R.A. and Hill, P.C. (2006) Health Seeking Behaviour, Health System Experience and Tuberculosis Case Finding in Gambians with Cough. *BMC Public Health*, **5**, Article No. 143. <https://doi.org/10.1186/1471-2458-6-143>
- [21] Lugga, M.C.L., Muita, M., Matiru, V. and Muchiri, E. (2011) Factors Associated with Patient and Health Service Delays in the Management of TB in Central Equatoria State in 2008. *South Sudan Medical Journal*, **4**, 83-85. <https://www.ajol.info/index.php/ssmj/article/view/132465>
- [22] Leung, E.C.C., Leung, C.C. and Tam, C.M. (2007) Delayed Presentation and Treatment of Newly Diagnosed Pulmonary Tuberculosis Patients in Hong Kong. *Hong Kong Medical Journal*, **13**, 221-227. <https://pubmed.ncbi.nlm.nih.gov/17548911/>
- [23] Engeda, E.H., Dachew, B.A., Woreta, H.K., Kelkay, M.M. and Ashenafie, T.D. (2016) Health Seeking Behaviour and Associated Factors among Pulmonary Tuberculosis Suspects in Lay Armachiho District, Northwest Ethiopia: A Communi-

- ty-Based Study. *Tuberculosis Research and Treatment*, **2016**, Article ID: 7892701. <https://doi.org/10.1155/2016/7892701>
- [24] Oluwadare, C. and Ibirinde, B. (2010) Health Seeking Behaviour of Tuberculosis Patients in Ekiti State, Nigeria. *Studies on Ethno-Medicine*, **4**, 191-197. <https://doi.org/10.1080/09735070.2010.11886380>
- [25] Grover, A., Kumar, R. and Jindal, S.K. (2006) Socio-Demographic Determinants of Treatment-Seeking Behavior among Chest Symptomatics. *Indian Journal of Community Medicine*, **31**, 145-149. https://www.researchgate.net/publication/45261991_Socio-demographic_Determinants_of_Treatment-Seeking_Behavior_among_Chest_Symptomatics/fulltext/0e60a544f0c4cf5df7c560ac/Socio-demographic-Determinants-of-Treatment-Seeking-Behavior-among-Chest-Symptomatics.pdf
- [26] Fochsen, G., Deshpande, K., Diwan, V., Mishra, A., Diwan, V.K. and Thorson, A. (2006) Health Care Seeking among Individuals with Cough and Tuberculosis: A Population-Based Study from Rural India. *International Journal of Tuberculosis and Lung Disease*, **10**, 995-1000. <https://pubmed.ncbi.nlm.nih.gov/16964790/>
- [27] Buregyeya, E., Kulane, A., Colebunders, R., Wajja, A., Kiguli, J., Mayanja, H., Musoke, P., Pariyo, G. and Mitchell, E.M. (2011) Tuberculosis Knowledge, Attitudes and Health-Seeking Behaviour in Rural Uganda. *The International Journal of Tuberculosis and Lung Disease*, **15**, 938-942. <https://doi.org/10.5588/ijtld.10.0211>
- [28] Ayisi1, J.G., Hoog, A.H., Agaya, J.A., Mchembere, W., Nyamthimba, P.O., Muhenje, O. and Marston, B.J. (2011) Care Seeking and Attitudes towards Treatment Compliance by Newly Enrolled Tuberculosis Patients in the District Treatment Programme in Rural Western Kenya: A Qualitative Study. *BMC Public Health*, **11**, Article No. 515. <https://doi.org/10.1186/1471-2458-11-515>
- [29] Gidado, M. (2019) Assessment of Tuberculosis Underreporting by Level of Reporting System in Lagos, Nigeria. Master's Thesis, Walden University, Minneapolis. <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=8815&context=disserations>
- [30] Onah, C.K., Azuogu, B.N., Ossai, E.N., Agu, A.P., Alobu, I. and Ogah, E.O. (2021) Addressing Constraints to Informal Providers' Involvement in Tuberculosis Control: A Qualitative Study of Patent Medicine Dealers and Tuberculosis Programme Managers. *Global Health Research and Policy*, **6**, Article No. 43. <https://doi.org/10.1186/s41256-021-00227-x>
- [31] Paynter, S., Hayward, A., Wilkinson, P., Lozewicz, S. and Coker, R. (2004) Patient and Health Service Delays in Initiating Treatment for Patients with Pulmonary Tuberculosis: Retrospective Cohort Study. *The International Journal of Tuberculosis and Lung Disease*, **8**, 180-185.
- [32] Murray, C.J.L., Styblo, K. and Rouillon, A. (1990) Tuberculosis in Developing Countries: Burden, Intervention and Cost. *Bulletin of the International Union against Tuberculosis and Lung Disease*, **65**, 6-24.
- [33] Razia, F., Mahboob, U.H., Aashifa, Y., Nasir, M., Ahmad, K.L., Osberg, M., Makayova, J., Hymoff, A. and Hanson, C. (2017) Delivering Patient-Centered Care in a Fragile State: Using Patient-Pathway Analysis to Understand Tuberculosis Related Care Seeking in Pakistan. *The Journal of Infectious Diseases*, **216**, S733-S739. <https://doi.org/10.1093/infdis/jix380>
- [34] Makgopa, S. and Madiba, S. (2021) Tuberculosis Knowledge and Delayed Health Care Seeking among New Diagnosed Tuberculosis Patients in Primary Health Facilities in an Urban District, South Africa. *Health Services Insights*, **14**, 1-9. <https://doi.org/10.1177/11786329211054035>