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Socio-Demographic Determinants of Health Care Seeking Behaviour of Tuberculosis Patients in South West, Nigeria

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Abstract
Background: *The role of health care seeking behaviour (HCSB) of patients in the treatment and cureof diseases has been well established. Addressing negative care seeking behaviours which hinder adequate TB contact tracing, treatment and cure requires a proper understanding of the social and demographic factors underpinning such behaviours.*
Objective: *The study examined the socio-demographic determinants of health care seeking behaviour of tuberculosis patients in South West, Nigeria.*
Materials and methods: *The study was a descriptive survey conducted in South West Nigeria. Data was collected from 1,218patients diagnosed and initiated on anti-TB treatment in TB Centers in five Local Government Areas using a structured questionnaire.*
Results: *The findings revealed that age (P=.012), religion (P=.036) and level of income (P=.024)significantly determined health care seeking behavior of the respondents.On the other hand, level of education was found not to be a significant determinant of health care seeking behavior among the respondents (P=.111).*
Conclusion: *Poor health care seeking behaviour among TB patients was associated with low socio-economic status, younger age and religious practices.*
Key words: *Socio-demographic, determinants, healthcare seeking behaviour, tuberculosis, Nigeria*

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I. Introduction

The battle against tuberculosis (TB) has been a tough one for Nigeria just like most developing countries. Nigeria is ranked third behind India and China in terms of tuberculosis prevalence[1].Being a major public health problem and a leading cause of death globally, TB accounts for more than 10% of all deaths in Nigeria with an estimated 245,000 TB deaths and 590,000 new cases recordedevery year [1]. The disease which is infectious and caused by the bacillus Mycobacterium tuberculosistypically affects the lungs (pulmonary TB) as well as other sites (extra pulmonary ETB). It is spread in the air when an infected person expels bacteria, for example by coughing, spitting, speaking, or sneezing. However, the probability of developing TB is much higher among people infected with HIV. Most cases of TB are drug-sensitive and respond well to standard treatment with a combination of drugs, but failure to complete a proper course of treatment encourages the development of multi-drug resistant TB (MDR-TB), which is difficult and costly to treat and has poorer outcomes[1].

Early detection of TB is critical to reduction of cases. The most common method for diagnosing TB is sputum smear microscopy, in which bacteria are observed in sputum samples examined under a microscope. Nigeria has one of the lowest detection rates in the world, with only 16% of cases being notified to the National TB and Leprosy Control Programme (NTLCP) [1].A health worker reportedly predicted that Nigeria will most likely meet the target with regards to treatment outcome but may never close the gap of contact tracing [3]; meaning that a number of TB infected individuals are not reporting to the hospital for diagnosis and treatment.Despite the effectiveness of the TB eradication interventionswhich include Directly Observed Treatment Short course, Public Private Partnership (PPP), 'Stop TB' programme, Radio Awareness programmesin Nigeria;delay in seeking care among tuberculosis patients isstill common [4].Delay in seeking treatment allows further transmission of the diseases [1].The ability of an individual to take the right action upon perceiving signs and symptoms of TB is therefore acriticalfactor in early detection of TB. Equally important is the individual's choice of health care, as well as adherence to treatment. These actions together define an individual's health care seeking behaviour (HCSB) with respect to TB.

Health care seeking behaviour has been viewed as a sequence of remedial action that individuals undertake to rectify perceived ill-health[5].This includes actions on perceived signs and symptoms; test seeking; choice of health care; and treatment adherence. Actions on perceived signs and symptoms examine the actions undertaken by individuals in response to signs and symptoms which basically depends on an individual's mental understanding of the significance and seriousness of the symptoms. The decision about the action may include self-medication, traditional treatment or meeting with health professionals. Test seeking behaviourappears to be one of the determinants of low case detection rate in TB as delay result from patients' failure to seek health care or the inability of the health system to detect TB on time [6]. Choice of health care, which is a decision concerning the type of health care to patronizesuch as orthodox or traditional, may be determined by the patient's or family's decision. Treatment seeking behaviour also depends on various factors such as constant supply of anti-TB drug, number of pills the patient takes, access to treatment, adverse drug reactions, symptomatic relief or lack of relief, complex treatment guidelines, dissatisfaction with TB service providers and poor communication interactions [7]. Some TB patients may perceive TB as a chronic disease that runs in the family and has no cure, so they depend on palliative treatment through self-medication. Treatment adherent behaviour describes an individual's willingness and action to comply with regular treatment. Treatment adherence behaviour means that a patient is following the recommended course of treatment by taking all the prescribed medications for the entire length of regimen. TB is curable if patients adhere to their TB treatment regimen. Non adherence is one of the major problems in TB control.

Around 2.9% of all cases of TB in Nigeria are multi-drug resistant, which is high in comparison to other countries [1]. It has been established that *M. tuberculosis* resistance may occur from poor adherence to anti-TB drug among others [8]. Onyedum, Alobu&Ukwaja in a study found that the prevalence rate of any drug resistance among new TB cases in Nigeria was 32.0% (95% CI 24.0–40.0%; 734/2892) and among previously-treated cases, the rate was 53.0% (95% CI 35.0–71.0%; 1467/5020) while multidrug resistance among new and previously-treated cases was 6.0% (95% CI 4.0–8.0%;161/2502)and 32.0% (95%CI 20.0–44.0; 357/949), respectively [7]. They further reported a pooled rates for northern region to be 36.0%, significantly lower compared with 62.0% observed among previously-treated TB patients in Southern Nigeria ($\chi^2 = 4.76$, P = 0.03) which is where this study was conducted.

This, occasioned bypoor patient awareness regarding the symptoms of the disease and lack of knowledge of healthcare providers has been reported to be responsible for delayed diagnosis.To control tuberculosis, it is very important that the diagnosis is established as early as possible and there is timely initiation of the anti-tuberculosis drugs.

Socio- demographic factors like age, sex, educational and economic status have been associated with healthcare seeking behaviour. This study was interested in investigating the association between TB patients' socio-demographic variables such as age, income, educational level, religion and their HCSB. These variables are regarded as modifying variables in the Health Belief Model (HBM) which are capable of influencing the predisposition to take a healthy action.This study, in essence anchored on the Health Belief Model (HBM) in trying to explain the role of socio-economic variables as determinants of TB patients' health care seeking behavior. Thehealth care seeking behavior of TB patients could be determinedbypre-disposing factors which is one of thebasic constructshighlighted in the Health Belief Model as. The pre-disposing factors include age, gender, religion, education among others.

The purpose of the study, hence, was to determine the socio-demographic determinants of health care seeking behaviour of TB patients in South-west Nigeria. Specifically, the study focused on age, educational status, economic status and religion as determinants of health care seeking behaviour of TB patients.

II. Methods

The study is a descriptive study conducted over a period of two years in South West Nigeria. All patients diagnosed and initiated on anti-TB treatment in the five local Government TB centers totaling 1213were used for the study. A self-structured and validated28-item questionnaire titled "Socio-demographic determinants of HCSB" with a reliability index of 0.79 was the instrument used in collecting data from the respondents. The questionnaire is a modified Likert scale withresponse options of 'Strongly Agree', 'Agree', 'Disagree' and 'Strongly Disagree'. The items covered the following HCSB: 'actions on perceived signs and symptoms of TB', 'choice of health care service', 'test seeking', 'treatment seeking', and 'treatment adherence'. A written informed consent translated in native language for the not so educated was obtainedfrom the respondents. Ethical approval from the study was givenby the Research Ethics Committee of University of Port Harcourt and the Research and Development unit of the Ministry of Health, Ibadan.Data obtained was analyzed using the Statistical Package for Social Sciences (SPSS). Analysis of Variance (ANOVA)set at 0.05 was the statistical tool used. A criterion mean of 2.50 was used to decide if a HCSB was positive or negative.

III. Results

Table 1a: Summary of Mean, ANOVA and Post Hoc Pairwise of no Significant Difference in Health Care Seeking Behaviour of TB Patients with Respect to Age. (n=1218)

a.

Health care seeking behaviour	**14-24** $\bar{x}$	$\bar{x}$	**25-34** $\bar{x}$	**35-44** $\bar{x}$	**45-54**	**55+**
Action on Perceived S/S	3.06	2.99	2.92	3.05	3.03	
TB Test Seeking Bebaviour	2.32	2.21	2.20	2.24	2.25	
Choice of Health Care Service	2.53	2.58	2.25	2.45	2.50	
Treatment Seeking Behaviours	2.45	2.03	1.92	2.36	1.89	
Treatment Adherent Behaviours	2.70	2.53	2.47	2.54	2.61	
Grand mean	**2.61**		**2.46**	**2.35**	**2.52**	**2.45**

b.

Sources of Variance	**Sum of Square**	**Df**	**Mean Square**	**F-cal.**	**F-crit.**	**Sig.**	**Decision**
Between Groups	1323.340	4	330.835	3.533	2.37	.012	Ho Rejected
Within Groups	113581.371	1213	93.636				
Total	114904.711	1217					

c. Post Hoc Pairwise Comparison with Scheffe's Test

Age Range	**Age Range**	**Mean Difference**	**significant**	**Results**
14 -24years	25-34 years	3.01195	.028	Significant
	35-44 years	1.32123	.978	Not sig.
	45-54 years	.56575	.978	"
	55 years and above	2.44339	.249	"

Data in table 1a showed that respondents who were 14 -24 years had the highest mean of 2.61 (> crit.$\bar{x}$ = 2.50). With a mean of 2.35and 2.46, respondents aged 35 – 44 years and 25 -34 years respectively had negative health care seeking behaviour.Table 1bshowed that with F-cal.of 3.533 (> F-crit.=2.37) at df of 4 & 1213, and p=0.12 <0.05, there was significant difference in health care seeking behaviours of TB patients with respect to age. Table 1crevealed that the source of significant difference in health care seeking behaviours of TB patients was found within the age range of 25-34 years (.028).

Table 2: Summary of Mean, ANOVA andPost Hoc Pairwise of no Significant Difference in Health Care Seeking Behaviours of TB Patients with Respect to Level of Income (n=1218)

a.

HCSB $\bar{x}$	**Less ₦10,000** $\bar{x}$	**₦10,000-₦20,000** $\bar{x}$	**₦21,000-₦30,000** $\bar{x}$	**₦31,000 +**
Action on Perceived S/S	2.97	3.05	2.99	2.85	
TB Test Seeking Behaviour	2.25	2.30	2.32	2.24	
Choice of Health Care Service	2.50	2.52	2.50	2.44	
Treatment Seeking Behaviours	1.90	1.96	1.95	1.88	
Treatment Adherent Behaviours	2.47	2.64	2.55	2.61	
Grandmean	**2.41**	**2.49**	**2.46**	**2.40**	

b.

Sources of Variance	**Sum of Square**	**Df**	**Mean Square**	**F-cal.**	**F-crit.**	**Sig.**	**Decision**
Between Groups	930.104	3	310.035	3.287	2.60	.024	
Within Groups	114522.907	1214	94.335				Ho rejected
Total	115453.011	1217					

c. Post Hoc Pairwise Comparison with Scheffe's Test

level of income	**level of income**	**Mean Difference**	**Significant**	**Result**

Less than ₦10,000	₦10,000 - ₦20,000	1.92729	.044	significant
	₦21,000 - ₦30,000	1.80415		
	₦31,000 and above	1.29476		
₦10,00 - ₦20,000	Less than ₦10,000	1.92729	.044	significant
	₦21,000 - ₦30,000	.12314		
	₦31,000 and above	.63253		
₦21,000 - ₦30,000	Less than ₦10,000	1.80415	.204	Not significant
	₦21,000 - ₦30,000	.12315		
	₦31,000 and above	.50939		
₦31,000 and above	Less than ₦10,000	1.29476	.691	Not significant
	₦10,000 - ₦20,000	.63253		
	₦21,000 - ₦30,000	.50939		

Results as shown in table 2a indicated that the mean responses of the respondents in different levels of income wereless than the criterion mean of 2.50 indicating that they had negative health care seeking behaviour. Table 2b showed that the F-cal. (3.287) is greater than the F-crit. (2.60) at df of 3 & 1214, and p = 0.24 <0.05signifying significant difference in health care seeking behaviour of the TB patients with respect to level of income Table 2c revealed that the source of significance was between those that earn less than ₦10,000 and ₦10,000 - ₦20,000.

Table 3: Summary of Mean and ANOVA Analysis of no Significant Difference in Health Care Seeking Behaviours of TB Patients with Respect to Educational level (n=1218)

a.

HCSB	**No formal ED** $\bar{x}$		**Primary ED** $\bar{x}$		**Post Prim. ED** $\bar{x}$		**Post-Sec. Education** $\bar{x}$
Action on Perceived S/S	3.02		2.96		3.01		3.03
TB Test Seeking Behaviour	2.24	2.28		2.25		2.32	
Choice of Health Care Service	2.43		2.71		2.56		2.49
Treatment Seeking Behaviours	1.99		1.96		1.91		2.02
Treatment Adherent Behaviours	2.59		2.50		2.55		2.68
Grand mean	**2.45**		**2.48**	**2.45**		**2.50**	

b.

Sources of Variance	**Sum of Square**	**Df**	**Mean Square**	**F-cal.**	**F-crit.**	**Sig.**	**Decision**
Between Groups	596.046	3	198.682	2.02	2.60	.111	
Within Groups	119167.262	1214	98.161				Ho accepted
Total	119763.308	1217					

Table 3a showed that respondents with post-secondary education had positive HCSB ($\bar{x}$ = 2.50), whereas those with lower educational status all had means less than the crit. mean of 2.50,an indication of negative HCSB.In Table 3b, the F-calculated value (2.02) is less than the F-critical value (2.60) atdf of 3& 1213, and p=.111> .05. Hence, there was no significant difference in health care seeking behaviour of TB patients with respect to educational level.

Table 4a: Summary of Mean, ANOVA and Post Hoc Pairwise of no Significant Difference in Health Care Seeking Behaviours of TB Patients with respect to Religion (n=1218)

a.

HCSB		**Christianity** $\bar{x}$		**Islam** $\bar{x}$	**Traditionalism**
Action on Perceived S/S	3.06	2.91		3.15	
TB Test Seeking Behaviour 2.28	2.26		2.36		
Choice of Health Care Service	2.29	2.54		2.51	
Treatment Seeking Behaviour2.27	2.41		2.44		
Treatment Adherent Behaviour		2.59		2.45	2.82
Grandmean		**2.49**		**2.52**	**2.65**

b.

Sources of Variance	Sum of Square	Df	Mean Square	F-cal.	F-crit.	Sig.	Decision
Between Groups	660.045	2	330.022	3.534	2.99	.036	
Within Groups	113468.230	1215	93.389				Ho rejected
Total	114128.275	1217					

c. **Post Hoc Pair wise Comparison with Scheffe"s test.**

Religion	Religion	Mean Difference	Significant	Result
Christianity	Islam	.92057		Not significant
	Traditionalism	-2.30651	.309	
	Christianity			
Islam	Christianity	-.92057		Significant
	Traditionalism	3.22708	.042	
Traditionalism	Christianity	2.30651		Significant
	Islam	3.22708	.042	

Information in Table 4a showed that respondents who were Christians had negative HCSB (2.49) while Moslems and Traditional religion practitioners had positive HCSB (2.52 & 2.65 respectively). Table 4b revealed that the F-cal.of 3.534 is greater than the F-crit.of 2.99 at df of 2 & 1215, and p=.036< .05. Hence, there was significance difference in health care seeking behaviour of TB patients in respect to religion. Table 4c showed that Christianity and Traditional religion with .042 and Christianity with Islam .042 were the sources of the significant difference.

IV. Discussion of Findings

Age has proved in this study to be a significant determinantof health care seeking behaviour of TB patients. The findings showed that respondents within the ages of 25-34 years had negative health care seeking behaviours and was the source of difference. Kumar and Jindal similarly found that TB patients who were between 15 – 30 years had negative health care seeking behaviour [9]. This is regrettable because this age group which had been identified as the most active and productive sector of the country's economy had also unfortunately been found to have most TB cases in developing countries [10],[11]. Perhaps, the negative health care seeking behaviour of this age group is a contributor to their vulnerabilityto TB. This finding also raises questions about the health literacy level of this age group. In this age when young people have easy access to information, communication and technology tools, it is expected that such people should be adequately informed on health issues and appropriate health care seekingbehaviour. This calls for the development of effective education information and communication (IEC) intervention targeting this risk population.

However, the findings revealed that job schedule to distant locations contributed to failure to keep treatment appointmentsby some of the respondents. This could lead to resistance to TB treatments and spread of the disease. Also, misconceptions and superstitions about the cause of TB held by some patients such as the disease being a spiritual attack from enemies, ancestral cause and a punishment for breaking cultural taboos [12] can possibly influence how a patient responds to testing and treatment.

The findings showed that there was significant difference in health care seeking behaviour with respect to level of income. The source of difference was between those earning N10,000to N20,000. It is quite understandable that low income earners will most likely delay in seeking health care on notice of signs and symptoms of disease, resort to self-medication instead of going for a test, patronize patent medicine dealers, spiritual leaders and traditional healers instead of hospitals and health centers, and probably default in treatment. Socio economic status when viewed from the perspective of the health belief model can provide a basis for individual perceived self-efficacy to engage in positive health care seeking behaviours. For instance, financial ability provides the motivation and confidence that one can pay for and obtain modern TB treatment in a good hospital.

Level of income of an individual may be so low that feeding becomes a problem let alone providing health care for the family. Such situation places the family on a high risk ofcross-infection. Kim et al.had discovered in their study that some respondents, due to their low level of income sought traditional unscientific diagnosis of tuberculosis which was risky to them and their family members [13]. It is noteworthy, though, thatTB treatment was free at TB centres in Ibadan. However, this information may not be available to all; moreover, other factors such as unscientific traditional beliefs about the cause of TB can be a deciding factor in health care seeking behaviour.

Mberu observed that the dense population of Ibadan has led to poverty and inequity, resulting in overcrowding, poor ventilation and poor sanitation in some areas of the city [14] which may further worsen the TB situation. UNDP had reported that Nigeria ranks 26th position among the poorest countries in the world, which is a reflection of predominantly low socio-economic status [15]. The socio-economic factors associated with tuberculosis and the traditional society of Ibadan appears to be hindrances to combating and eradicating the disease completely. Vander Wang et al.;similarly who found that unemployed individuals with signs and symptoms of TB had a longer delay before seeking health care [16]. The same applies to individuals with risk factors such as homelessness, joblessness. Siddiqui et al., Rundi noted that poverty, illiteracy, and lack of knowledge regarding adherence to treatment and precautionary measures of disease, might be putting a large number of people on high risk especially those who are around tuberculosis patients [17], [18].Niruparani et al. in their study found that income seemed to have influenced choice of health care services in that, those with higher incomes sought private care [19]. Muhammed and Sabas reported that rural locality and lower socio economic status were significantly associated with delay in treatment seeking [20].

Although more respondents of low income earners had negative HCSB, the study discovered that many respondents across all income levels bought drugsfrommedicine shops, took traditional treatment and preferred spiritual healing. Many did not take any serious action because they thought that symptoms would gradually subside.Yimer, et al. noted that among others, socio-economic factor and lack of information concerning tuberculosis play key roles in governing the health seeking behaviours of patients with TB symptoms [21].

Level of education was not a significant determinant of HCSB. However, respondents withpost-secondary education had a mean score that is slightly higher than the rest while those without any formal education had the same mean score as those with post-primary education. Again, respondents without formal education were better than those with primary and post primary education in terms of taking appropriate actions on notice of signs and symptoms of TB and in adhering to TBtreatment. This finding is quite surprising and contrary tothe reports ofSabramaniamand Ford et al, that poor literacy was one of the major causes associated with patients' delay in reporting to a health facility [22][23].It is also not consistent with Bello and Itiola's findings in Egypt where more than half (66%) of the patients with poor HCSB were either illiterates or could not read and write [24]. The fact that respondents of lower educational status did not differ much in HCSB with their more educated counterparts may mean that other factors, particularly socio-cultural and socio-economic factors may have had greater influence on the HCSB of the respondents.In contrast with the findings of this study, Bello and Itiola found that education was significantly associated with drug adherence [24]. Therefore, educational level failed to be an enabling factor in this study contrary to the assumptions of the Health Belief Model.

The study showed that there was a significant difference in the HCSB of the tuberculosis patientsbased on religion. Significant difference was established between Christianity and Islam. Religious beliefs of individuals play significant roles in their health seeking behaviour during time of crisis. The problem of tuberculosis in African traditional society such as Nigeria is often compounded by religious beliefs which give room for the spread of the disease because patients often resort to alternative health care leading to delay in seeking orthodox TB treatment.

The mean response of health care seeking behaviours of patients' action on perceived signs and symptoms were significantly high among respondents from the three religions used in this study but Moslem respondents scored lower. Ilongo in his study found that respondents' beliefs caused delays in presentation of symptom to the clinic [25]. This is consistent with Tarumola, Ahende and Julius who observed that beliefs are well known to contribute to delay in seeking health-care [26]. Prayer could be used as secondary psychological support to anti-tuberculosis treatment.However, the time spent going from one spiritual house to another may pose danger to the life of the patient, family and community as TB is highly contagious especially at the intensive phase.

In all these actions, the respondents failed to understand the importance of seeking treatment from the right health care providers; rather most Christians bought drugs from the chemist shops, Moslems took traditional treatment and traditionalist preferred spiritual healing. This could mean that these people still believed that TB or any illness is the manifestation of evil spirit or a result of broken cultural belief of man. This could explain why in Tanzania, traditional beliefs such as 'evil eye", satan and witchcraft were the commonest perceived causes of TB.[27] The lack of understanding of the health care seeking behaviour and treatment is hereby displayed because the major treatment of TB is through the use or administration of tablets.

Generally, Christian respondents had negative HCSBwhile Moslems andTraditionalists had positive HCSB with the Traditionalists having the highest mean score. This is not unexpected because it is common practice among Christians in Nigeria especially the Pentecostals to depend on their pastors for healing. Belief in miraculous healing has become widespread among Christians especially in these times of economic crunch when many are struggling to feed their families and cannot afford to spare any money for medical bills.Also, considering the prolonged treatment and the attendant inconveniences as well as the stigma that goes with the disease, people would gladly go for any promise of instant healing. Hence, miraculous healing is seen as a

cheaper alternative. Unfortunately, the consequence is that by the time the expected miracle fails them, they are already in advanced stages of the disease leaving a trail of possibly infected contacts.

V. Conclusion

Poor health care seeking behaviour among TB patients is associated with low socio-economic status, younger age and religious practices.TB multi-drug resistance can be reduced and diagnosis and contact tracing improved if multi-media health education interventionsare employed to reach every member of the society, paying particular attention to churches and other religious institutions.

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