



Research Paper

Psycho-Cognitive Factors towards Tuberculosis Prevention among Patients Attending Anti-Retroviral Therapy Clinic in Ogun State, Nigeria

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ABSTRACT

Introduction

Tuberculosis (TB) is the most common opportunistic infection among HIV-infected persons. This study therefore examined the psycho-cognitive factors towards prevention of tuberculosis among patients attending ART clinic in Babcock University Teaching Hospital, Ikenne Local Government Area Ogun State, Nigeria.

Method

The study adopted a cross-sectional design. Systematic sampling technique was used to select Two hundred and twelve respondents from the ART clinic. Descriptive statistics, correlation and Spearman's non-parametric correlation fixed at 0.05 significant level was conducted to give statistical responses to the research questions and hypotheses using SPSS version 21.

Result

The respondents had poor knowledge on tuberculosis with a mean score of 6.92 ± 2.49 , poor perception with a mean score of 12.49 ± 3.33 . The respondents had good attitude towards prevention of tuberculosis with a mean score of 12.68 ± 4.09 furthermore, there is a significant correlation between respondents' knowledge and preventive practices towards tuberculosis (Knowledge ($R = 0.21; p < 0.05$)). There is a significant correlation between respondents' attitude and preventive practices towards tuberculosis (Attitude ($R = 0.29; p < 0.05$)).

Conclusion

In conclusion Knowledge gap about TB in high-risk groups especially in HIV patients can have serious consequences on TB control program generally. Health education intervention and assertive training programs for patients attending ART clinic in Babcock university teaching hospital is needed to improve their knowledge about tuberculosis.

KEY WORDS: Tuberculosis, Knowledge, Perception and Attitude

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I. BACKGROUND

Tuberculosis (TB) is a chronic infectious disease and a global public health problem that affects millions of individuals (WHO, 2018). The reason for the resurgence of TB in Africa is mainly due to the link between tuberculosis and HIV. HIV increases the lifetime risk of TB infection (Ahmed et al., 2018; Mohammed et al., 2020). Similarly, TB is the major opportunistic infection and leading cause of death among HIV-positive individuals worldwide (Ayalew et al., 2015; Endalamaw et al., 2020; Taha et al., 2011). Nigeria accounts for about 4% of the estimated incidence cases of tuberculosis globally (FMOH 2017). According to the Global TB report (2019), Nigeria is ranked number one in Africa and globally sixth amongst the 30 high TB burden countries and is also among the 14 countries in the world with the triple high burden of TB, TB/HIV and Drug Resistant TB (DR-TB).

The prevalence of tuberculosis among HIV/AIDS patients rose up to 27% due to the increase in the association of TB with HIV/AIDS (Onyebuchi, 2015). A recent national survey by the National Tuberculosis, Leprosy and Bruli-ulcer Control Programme on catastrophic cost experienced by TB patients in Nigeria in 2017 reports that 51% of TB patients experienced catastrophic cost with a higher proportion (93%) among drug

resistance TB patients by the human capital catastrophic cost estimation threshold of 20% (FMOH 2017) indicating the severity of TB in the country. It has been reported that more than 80.0% of TB cases are found in people ranging from 18 to 59 years of age (Ministry of Public Health Thailand, 2019).

The determinants associated with TB development and acquiring of disease and its epidemiological burden includes poverty, people with poor immune systems, particularly people who are infected with human immunodeficiency virus (HIV) (Abhishekh, Suzanne, Naveen, 2016), poor nutritional status especially in children (Bhagya, Thomas and Sasidharan 2019), smoking, poor access to health facilities, lack of awareness and knowledge about the cause, mode of transmission, and symptoms of TB, lack of financial sources, lack of health education, demographic characteristics, socio-economic status and traditional beliefs. All these to some extent have an essential impact on the health and behavior of patient seeking health care (Kumar, Abbas, Fausto, and Mitchell, 2007).

Molaeipoor, Poorolajal, Mohraz, and Esmailnasab, (2014) opined that people infected with HIV develop TB, while some do not; this implies that being HIV positive is not a mere factor for being infected with TB, because there are various psycho-cognitive factors such as knowledge, attitude and perception that can either predispose HIV patients to tuberculosis or enhance their prevention level from contracting tuberculosis.

Tuberculosis is the most common opportunistic infection among HIV-infected persons, leading to the death of HIV patients most especially in the sub-Saharan Africa where there is a significant increase in the disease because of the prevalence of HIV/AIDS (Nwankwo 2015; Gyar, Dauda, Reuben, 2014). However, several scholars in their studies have proved that the incidence of TB among HIV-positive patients is still high (Alene et al., 2013; Ahmed et al., 2018; Dalbo and Tamiso, 2016; Semu et al., 2017) and the chances of developing tuberculosis in persons infected with HIV is much more higher than those that are HIV negative (WHO, 2016), mainly because of their immune compromised status.

Regardless of the progress, there are still considerable gaps in screening for TB, detection of TB and provision of TB preventive treatment among people living with HIV, even in high TB and TB/HIV burden countries (WHO, 2020). Thus, creating awareness on the psycho-cognitive factors (knowledge, perception and attitude) and prevention of tuberculosis among HIV patients attending ART clinic in BUTH will also help to reduce the burden of the disease by facilitating the early detection of at-risk patients and urging the authority responsible to devise surveillance and proper follow-up activities in the area of TB/HIV collaborative activities. The main objective of this study is to assess the psycho-cognitive factors towards prevention of tuberculosis among patients attending ART clinic in Babcock University Teaching Hospital through the use of Precede model in identifying the personal factors (knowledge, perception and attitude) that predispose HIV patients receiving ART to tuberculosis infection,

II. METHODS

This study used a descriptive cross-sectional research design. The aim for this design is to provide data on the entire population under study. The population for this study will comprise of 531 male and female living with HIV infection attending ART clinic at Babcock University Teaching Hospital

The sample size was decided using Cochran's sample size determination formula (1963) for large population.

$$n = \frac{Z^2 pq}{e^2}$$

The minimum sample size for this study was 212 respondents

The systematic sampling method was used to select the participants for the study.

A semi-structured questionnaire was used to obtain information concerning the psycho-cognitive factors towards prevention of tuberculosis among patients attending ART clinic.

Ethical clearance was obtained before going to the field to shield the participants' right. Informed consent was also given through verbal communication and interaction with the patients. Participants were allowed to voluntarily choose to participate.

Method of Data Analysis

The data collected was coded appropriately and analyzed and presented in table using Statistical Package for Social Sciences (SPSS) version 21.0.

III. RESULTS

Respondents Level of Knowledge on Tuberculosis Prevention

Variables and Items to be considered	Respondents in this Study	
	N	%
Have you heard of tuberculosis before		
Yes	61	28.8
No	151	71.2
Which organism causes tuberculosis		
Mosquito	35	16.5
Mycobacterium	75	35.4
Virus	91	42.69
Ant	11	5.2
Tuberculosis is transmitted through air when a person Coughs or sneezes		
Yes	104	49.1
No	108	50.1
Symptoms of TB include cough lasting for more than two weeks		
Yes	104	49.1
No	108	50.9
Chest Pain		
Yes	116	54.7
No	96	45.3
Coughing out sputum with blood		
Yes	107	50.5
No	105	49.5
Weight gain		
Yes	60	28.3
No	152	71.7
Loss of weight		
Yes	116	57.5
No	96	42.5
Fever		
Yes	122	49.1
No	90	50.9
Night sweat		
Yes	104	49.1
No	108	50.9
Breathlessness		
Yes	128	60.4
No	84	39.6
Tuberculosis can be cured using anti-tuberculosis drugs		
Yes	88	41.5
No	124	58.5
Tuberculosis is not curable		
Yes	119	56.1
No	93	43.9
Tuberculosis is curable in HIV patients		
Yes	93	93.0
No	2	2.0
I don't know	5	5.0

*Frequency (N), Percentage (%)

Table 4.2.1 Category of Respondent's Level of Knowledge on Tuberculosis Prevention

Variables and Items to be considered	Respondents in this Study N=212	
	N	%
Negative (1-7)	125	59
Positive (8-14)		87
Mean score = (6.92)		41

Table 4.3 Respondents Level of Attitude

Variables and Items to be considered	Respondents in this Study N=212	
	N	%
I don't like coming close to TB patients because they may infect me		
Strongly Disagree	45	21.2
Disagree	56	26.4
Agree	76	35.8
Strongly Agree	35	16.5
I don't feel comfortable sitting close to a person that coughs often		
Strongly Disagree	33	15.6
Disagree	65	30.7
Agree	64	30.2
Strongly Agree	50	23.6
I try as much as possible to cover my mouth and nose when Someone coughs around		
Strongly Disagree	30	14.2
Disagree	33	15.6
Agree	102	48.1
Strongly Agree	47	22.2
I will be sad and hopeless if I am told I have tuberculosis		
Strongly Disagree	33	15.6
Disagree	56	26.4
Agree	76	35.8
Strongly Agree	47	22.2
HIV infected people should be concerned about tuberculosis		
Strongly Disagree	20	9.4
Disagree	70	33.0
Agree	67	31.6
Strongly Agree	55	25.9
I try as much as possible to wash my hands regularly		
Strongly Disagree	21	9.9
Disagree	34	16.0
Agree	106	50.0
Strongly Agree	51	24.1
I eat enough fruits and vegetables to boost my immune system		
Strongly Disagree	21	9.9
Disagree	37	17.5
Agree	106	50.0
Strongly Agree	48	22.6

*Frequency (N), Percentage (%)

Table 4.3.1 Category of Respondent's Level of Attitude

Variables and Items to be considered	Respondents in this Study N=212	
	N	%
Negative (4-12)	100	47.2

Positive (13-21) 112 52.8
 Mean score = (12.68)

4.4 Respondents Level of Perception

Variables and Items to be considered	Respondents in this Study N=212	
	N	%
I am likely to have TB as an HIV patient		
Strongly Disagree	60	28.3
Disagree	57	26.9
Agree	53	25.0
Strongly Agree	42	19.8
I feel tuberculosis is a very deadly disease especially for those with HIV infection		
Strongly Disagree	40	18.9
Disagree	61	28.8
Agree	85	40.1
Strongly Agree	26	12.3
I think tuberculosis is caused by witch craft		
Strongly Disagree	79	37.3
Disagree	72	34.0
Agree	30	14.2
Strongly Agree	31	14.6
I feel TB is transmitted by eating with an infected person		
Strongly Disagree	59	27.8
Disagree	84	39.6
Agree	40	18.9
Strongly Agree	29	13.7
I believe that TB is curable through resting at home without medication		
Strongly Disagree	94	44.3
Disagree	73	34.4
Agree	26	12.3
Strongly Agree	19	9.0
I believe that TB can be cured with herbal medicine		
Strongly Disagree	60	28.3
Disagree	78	36.8
Agree	45	21.2
Strongly Agree	29	13.7
I believe that TB can be cured using medicine under the directly observed Treatment short course (DOTs)		
Strongly Disagree	41	19.3
Disagree	50	23.6
Agree	77	36.3
Strongly Agree	44	20.8

*Frequency (N), Percentage (%)

Table 4.4.1 Category of Respondent's Level of Perception

Variables and Items to be considered	Respondents in this Study N=212	
	N	%
Positive (16-22)	128	60.4
Negative (23-28)	84	39.6
Mean score = (12.49)		

Hypothesis 1: There is no significant relationship between patients' knowledge and preventive practices towards tuberculosis. The result of the Pearson correlation showed that there is a significant correlation between respondents' knowledge and preventive practices towards tuberculosis (Knowledge (R= 0.21;p<0.05). Therefore based on this value, the null hypothesis is rejected in favour of the alternative hypothesis.

4.9 Relationship between respondents' Knowledge and TB Preventive Practices

Variable	TB PREVENTIVE PRACTICES	
	Respondents in this study N=212	
Pearson Correlation		
Variable _____	R _____	P value _____
Knowledge	0.21	0.002

Hypothesis 2: There is no significant relationship between respondents' attitude and preventive practices towards tuberculosis. The result of the Pearson correlation showed that there is a significant correlation between respondents' attitude and TB preventive practices. (Attitude (R= 0.29;p<0.05). Therefore based on this value, the null hypothesis is rejected in favour of the alternative hypothesis.

IV. DISCUSSION

The findings of this study revealed that 59% of the respondents' have negative knowledge regarding tuberculosis. This result supports the findings of Uchenna, Chukwu, Oshi, Nwafor, and Meka, (2014) in Nigeria, Enugu State which revealed that Knowledge of TB prevention was poor. More also, this result is in line with studies of Gouda, Peerapur, Rudramma, Kaleem, Sandhya, (2014); and Arora Vadrevu, Chandrasekhar, Gupta, (2012) but contradicts the study of Agofure, Okandjeji-Barry, Musa and Odjimogho, (2018) where 88.0% of the respondents demonstrated good knowledge of tuberculosis. This result also contradicts the findings of Laxman and Torgal (2014) conducted in the center of Belgaum District Hospital where 215(53.8%) had good knowledge, 130(32.5%) had an average knowledge and 55(13.8%) had poor knowledge regarding tuberculosis. Findings from this study revealed also that 71.2% of the respondents have not heard of tuberculosis, 42.9%. This result is higher compared to the findings of Arora, Vadrevu, Chandrasekhar, and Gupta (2013) where (31%) of the respondents' had not heard of TB, among the 88 patients who had heard of TB, 47 (53%) were not familiar with anti-tuberculosis drugs and 62 (70%) could not list a correct method of TB transmission. believed that tuberculosis is caused by a virus and 54.2% reported that tuberculosis is not transmitted through air when a person coughs or sneezes as signs and symptoms of tuberculosis. This agrees with the result from the study of Bisallah, Rampal, Sidik, Iliyasu, Lye, & Onyilo, (2018) where (21.2%) do not believe that TB can be transmitted by coughing or sneezing, one of the major route of transmission of the disease.

Furthermore, findings showed that (58.5%) of the respondents do not know that tuberculosis can be cured using anti-tuberculosis drug via DOTS strategy while (56.1%) of the respondents' reported that that tuberculosis is not curable. Most of the respondents (51.4%) do not know that tuberculosis is curable in HIV patients. This result of this study is higher compared to the findings of Bisallah, Rampal, Sidik, Iliyasu, Lye, & Onyilo, (2018) where fifty-eight (25.7%) of the respondents are not aware of directly observed treatment short course (DOTS) as a strategy for the treatment of tuberculosis and among those aware of the strategy, only 158 (66.9%) know the duration of treatment.

Findings from this study revealed that the proportion of the respondents with good attitude towards prevention of tuberculosis was 52.8% which supports the findings of Imoleayo&Olaiya (2017) which found that the level of attitude of people living with HIV towards TB infection control is fair 55%. But contradicts the findings of Bisallah, Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) and Tobin, Okojie, & Isah (2013) where 54.4% and 55.7% had negative attitude toward tuberculosis. Despite the good attitude obtained from this study among respondents, it is also worrisome that (35.8%) of the respondents' strongly agreed that the feeling of sadness and hopelessness will arise if they are told that they are tuberculosis positive. This supports the study of Bisallah, Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) where (47.8%) and (31.9%) of the respondents are probable cases of anxiety and depression respectively.

Findings from this study revealed that 60.4% of the respondents have a poor perception concerning tuberculosis infection. Result also showed that (28.3% and 26.9%) of the respondents reported that they are not likely to have tuberculosis even though they are HIV positive. This result support the findings of Bisallah, Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) On the vulnerability of TB infection where 81 (35.8%) of the respondents don't believe that everybody is at risk of contracting tuberculosis This result is worrisome considering the level of low immunity of HIV patients.

More also, findings showed that few, (28.8%) of the respondents strongly disagreed that tuberculosis is a very deadly disease especially for those with HIV infection. 28.8% of the respondents' agreed and strongly agreed that tuberculosis is caused by witchcraft. This result is lower but supports the findings of Bisallah,

Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) where (59.5%) of the respondents believe that TB is caused by witchcraft. Also, a report of a study in southwest Ethiopia on TB disclosed that 15.9% of the respondents believe TB is caused by witchcraft and 50.4% by 'evil eye' a superstitious belief consistent with findings of AbebeDeribewApers, Woldemichael, Shiffa, Tesfaye, et al. (2010).

Furthermore, this study revealed that (32.6%) of the respondents agreed and strongly agreed that tuberculosis can be transmitted by eating with an infected person. Majority (44.3%) of the respondents strongly disagreed that tuberculosis is curable by resting at home without medication. 34.9% of the respondents agreed and strongly agreed that tuberculosis is cured using herbal medicine. This result is in line with the result of the study of Bisallah, Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) where (54.9%) responded that TB can be cured using herbal medication. This also affirms the study carried out in South Africa in which local communities in this era of the availability of effective TB medication are still largely dependent on herbal medicine for the treatment of tuberculosis (Semenya, and Maroyi 2013).

Lastly, 42.9% of the respondents disagreed and strongly disagreed that tuberculosis can be cured using directly observed treatment short course. This result is similar to the findings of Bisallah, Rampal, Sidik, Iliyasu, Lye, and Onyilo, (2018) where Fifty-eight (25.7%) of the respondents are not aware of directly observed treatment short course (DOTS) as a strategy for the treatment of tuberculosis and among those aware of the strategy, only 158 (66.9%) know the duration of treatment.

V. CONCLUSION

From the findings of the study, it can be concluded that knowledge and perception of male and female patients attending anti-retroviral clinic is poor. There is need for public health educators with greater knowledge on Tuberculosis to health educate the patients attending ART clinic for good health seeking behavior. Most of the respondents do not know signs and symptoms of tuberculosis and some reported that tuberculosis is not curable among HIV patients. Improving knowledge on TB in people living with HIV is essential in tuberculosis control strategy as it shapes their health seeking behavior including the ability to identify the diseases, causes and mode of transmission and also familiar with the available cure.

VI. RECOMMENDATIONS

1. Health education intervention and assertive training programs for patients attending ART clinic in Babcock university teaching hospital is essential in other to improve their knowledge about tuberculosis.
2. Public health educator should increase efforts to improve TB diagnosis, treatment, and prevention required to meet global targets for 2020–2035.

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