

Awareness of Tuberculosis and HIV Co-infection amongst Antenatal Clinic Attendees at the Rivers State University Teaching Hospital

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ABSTRACT

Background: Tuberculosis (TB) is a major public health problem in Nigeria with an estimated prevalence of 0.62%. Nigeria ranks first in Africa and fourth among the 22 high TB burden countries in the world, with about 460,000 cases of TB recorded annually. HIV is the prime risk factor for TB. However, the prevalence of TB/HIV co-infection is 17.4%. **Aim:** To determine the awareness of TB and co-infection with HIV amongst antenatal clinic (ANC) attendees at the Rivers State University Teaching Hospital (RSUTH). **Method:** This was a cross sectional study of ANC attendees at the RSUTH. The simple randomized sampling method was used. The information was coded and analyzed using SPSS version 25. **Results:** The total number of 200 questionnaires was distributed and 190 retrieved. The mean age was 32 years and the modal parity was 0. The mean gestational age was 30 years. The awareness of TB amongst the ANC attendees was 177 (93.2%). The awareness of TB/HIV co-infection was 143 (75.3%). Six (3.2%) had family members/friends with TB, HIV or TB/HIV co-infection. Forty-five (76.3%) of the respondents had BCG vaccine in infancy. **Conclusion:** The study revealed the TB awareness amongst ANC attendees amongst ANC attendees at the RSUTH as high and TB/HIV co-infection awareness was above average (75.3%). Enlightenment program is needed to create awareness to prevent the scourge of TB and TB/HIV co-infection.

Keywords: Awareness, TB, TB/HIV co-infection, ANC attendees, RSUTH

INTRODUCTION

An estimated one third of the world's population is said to be infected with mycobacterium tuberculosis [1]. Sub-saharan Africa and Asia having the highest prevalence. Countries ravaged by HIV/AIDs have more than half of those affected with Tuberculosis [2,3]. With the emergence of Human Immunodeficiency Virus (HIV) in human history has paved way for the emergence of mycobacterium tuberculosis infection [3]. Researchers have revealed that HIV is the prime risk factor for the progression of *M. Tuberculosis* infection to TB disease [3]. Myriad of literature revealed that HIV/TB co-infection is the world's leading cause of death [2]. The duet of HIV/TB is described as linked to malnutrition, unemployment, poverty, drug abuse and alcoholism [4,5]. These are risk factors for the reactivation of latent TB and increased risk in subsequent episodes of TB from exogenous reinfection [5]. The low immunity in HIV patients makes them vulnerable to TB [1,2]. This

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strengthens why the sero-prevalence of HIV amongst TB patients ranges between 24 – 67% [3,4]. Studies have further strengthened the need for developing awareness as to the prevention of HIV/TB co-infection in Rivers State and Nigeria in general. Hence, the reason for this research works.

AIM

To determine the awareness of TB and co-infection with HIV amongst antenatal clinic (ANC) attendees at the Rivers State University Teaching Hospital (RSUTH).

METHODS

Design: This was a cross sectional study of ANC attendees at the RSUTH.

Setting: Hospital based study.

Participants: They were antenatal clinic attendees who were systematically selected, obtained informed consents with ethical approval.

Tool: A structured questionnaire, information obtained by self reporting.

Sampling/Sample size: Systematic sampling method was used.

Sample size formula $N = Z^2Pq/d^2$

Sample Size Determination

In a similar study conducted by Fite RO et al prevalence of TB/HIV co-infection was 17.4% [2]. Therefore, the minimum sample size for simple proportion with 5% accuracy and 95% level of confidence will be calculated below as: approximated to 200.

$$n = \frac{Z^2 \times P(1 - P)}{d^2}$$

Where

n = the desired sample size

z = the standard normal deviate, usually set at 1.96, which corresponds to 95% confidence level

p = the proportion (prevalence) in the target population estimated to have a particular characteristic

d = is the tolerance i.e. how close the proportion of interest is to the desired estimate e.g. within 0.05.

The information was analyzed using SPSS version 25

RESULTS

Table 1: Statistics highlighting the mean, median, mode of the parameters of the response

Statistic-Age	
Mean	32
Standard Error	0.336162
Median	32
Mode	34
Standard Deviation	4.63367
Sample Variance	21.4709
Kurtosis	-0.17935
Skewness	-0.24283
Range	24
Minimum	20
Maximum	44
Sum	6080
Count	190

Modal parity is nullipara

Mean Gestational age is 30 weeks

Table 2: Frequency table showing the parity and corresponding percentages

Variable	Frequency	Percentage
Parity		
0	68	35.8
1	56	29.5
2	36	18.9
3	22	11.6
4	6	3.2
5	1	0.5
6	0	0
7	1	0.5
Awareness of TB amongst ANC		
No	13	6.8
Yes	177	93.2

Awareness of TB/HIV Co-infection	47	24.7
No	143	75.3
yes		
% had TB in the Past		
No	189	99.5
Yes	1	0.5
5		
yes		
If 6 is yes were you treated	190	100
No	0	0
Yes		
Had family member/friend with TB,HIV OR TB/HIV co-infection	184	96.8
No	6	3.2
Yes		

DISCUSSION

The study revealed the awareness of TB/HIV co-infection amongst ante natal clinic attendees at the Rivers State University Teaching Hospital as 75.3%. Although this was above average it is still not encouraging compared to developed countries of the world [2]. The burden of TB/HIV is particularly higher in developing countries of the world due to factors like poverty, malnutrition, illiteracy, some cultural and traditional practices [3]. In addition, Nigeria also is in the list of high burden counties for TB/HIV with an incidence of 63,000 alongside Ghana, Liberia and Guinea Bissau [6]. An estimate from WHO (Africa) Global report 2016 revealed that about 93,000 cases of MDR-TB along side with HIV occurred in the region, and Nigeria having 20,000 of these cases [6,7]. Poverty and under-nutrition are the big challenge in West Africa influencing TB/HIV epidemic [5]. The poor population are more likely to contact TB and HIV-co-infection due to over-crowded living conditions when compared to the more affluent countries [8]. The study also revealed that 3.2% (Table 2) of the respondents attested to the fact that they had family members infected with TB, HIV or HIV/TB co-infection this indeed high. It is quite serious because this was an institutional based study meaning that data collected from the community will reveal larger figures. In addition, most of those the figures from developing countries are under reported due to a lot of factors [8]. Some of these factors for under reporting in the developing countries there is a lack of political will of the government towards engaging with key population associates in expansion and sustainability of programs even when funded. As such, the TB/HIV epidemic facing the region cannot be effectively controlled, and the risk of contracting these infections is high [4]. The challenges of TB/HIV co-infection in the West Africa are myriad [6-8]. The rapid HIV prevalence, more than 75% of TB cases are HIV associated, with 31% of the total new cases of TB in adults (15 -49 years) are co-infected with HIV [8]. This is in agreement with our study which revealed the mean age of the respondents in the study as 32 years.

CONCLUSION

Tuberculosis still remains one of the major public health problems especially among HIV patients as an opportunistic disease. HIV epidemic and poverty together with TB and over-crowding still remain major challenges facing the eradication of these diseases in West Africa. Others include stigmatization, financial burden, traditional believes and poor TB diagnostic methods. If all these put in place together with strong political will by the regional government to eradicate these diseases, then the world will begin to see reduce incidence in TB/HIV co-infections.

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