

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND TUBERCULOSIS-RELATED SOCIAL STIGMA AMONG SCHOOL ADOLESCENT IN A SEMI-URBAN TOWN IN CROSS RIVER STATE, NIGERIA

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Abstract

Tuberculosis is a major public health problem in Nigeria. A cross-sectional study design was employed to assess the knowledge, attitude and TB-related social stigma among school adolescent in a semi-urban town in Cross River State, Nigeria from June to July 2013. A pre-tested structured questionnaire was employed in the generation of qualitative data from 412 respondents in four secondary schools within Ogoja urban. Simple and systematic random sampling techniques were employed in the selection of schools and students who consented to participate in the study. The result of this study showed that, respondents were predominantly within the age bracket of 15-19 years 224 (61.0%), Christians 382 (95.5%), males 227 (56.7%) and reside with both parents 139 (34.8%). Most respondents (97.0%) claimed to be aware of TB with the media (34.1%) as their major source of information. Respondents exhibited a high knowledge of TB transmission but knowledge of TB causes, treatment and prevention were reported low in this study. Attitude of respondents towards TB was positive but 30.5% were not aware that TB treatment is free. Prevention practices of school adolescent toward TB is reported high because 79.5% felt that prompt diagnosis and treatment and avoiding crowded environment (36.0%) are effective strategies to prevent the spread of TB. However, stigma and discrimination towards TB patients was also reported high among adolescent. Hence, effective strategies should be adopted in adequate advocacy, sensitization and social mobilization in schools to make up for the knowledge gap found among school adolescent in this study.

Keyword: Tuberculosis, School Adolescent, Ogoja urban, Nigeria

1. INTRODUCTION

Tuberculosis is the second most common cause of death from infectious disease (after those due to HIV/AIDS) (Mandell, Douglas, Bennett & Raphael, 2010). The absolute number of tuberculosis cases ("prevalence") has been decreasing since 2005, while new cases ("incidence") have decreased since 2002 (WHO, 2011). China has achieved particularly dramatic progress, with an approximate 80% reduction in its TB mortality rate between 1990 and 2010 (WHO, 2008). Tuberculosis is more common in developing countries; about 80% of the population in many Asian and African countries test positive in tuberculin tests, while only 5–10% of the US population test positive (Kumar, Abbas, Fausto & Mitchell, 2007).

In 2007, the country with the highest estimated incidence rate of TB was Swaziland, with 1,200 cases per 100,000 people. India had the largest total incidence, with an estimated 2.0 million new cases (WHO, 2009). In developed countries, tuberculosis is less common and is found mainly in urban areas. Rates per 100,000 people in different areas of the world where: globally 178, Africa 332, the Americas 36, Eastern Mediterranean 173, Europe 63, Southeast Asia 278, and Western Pacific 139 in 2010 (WHO, 2008). In Canada and Australia, tuberculosis is many

times more common among the aboriginal peoples, especially in remote areas (FitzGerald, Wang & Elwood, 2000). In the United States the Aborigines have a fivefold greater mortality from TB (Birn, 2009). The incidence of TB varies with age. In Africa, it primarily affects adolescents and young adults (WHO, 2006). However, in countries where incidence rates have declined dramatically (such as the United States), TB is mainly a disease of older people and the immunocompromised individuals.

Nigeria is ranked 4th among the 22 worst affected countries in the world and the 1st in Africa (WHO, 2011). The latest value for Incidence of tuberculosis (per 100,000 people) in Nigeria was 118.00 as of 2011. Over the past 21 years, the value for this indicator has fluctuated between 182.00 in 2003 and 118.00 in 2011 (WHO, 2012).

Concerted efforts used to totally control the disease have been dramatically dampened because of a number of factors, including the difficulty of developing an effective vaccine, the expensive and time-consuming diagnostic process, the necessity of many months of treatment, the increase in HIV-associated tuberculosis, and the emergence of drug-resistant cases in the 1980s (Lawn & Zumla, 2011). Several other studies have indicated that lack of knowledge and poor prevention practice of tuberculosis also increases the risk of contracting tuberculosis (Tanimowo, 1999; Hashim, Al Kubaisy & Al Dulayme, 2004; Obuku*, Meynell, Kiboss-Kyeyune, Blankley, Atuhairwe, Nabankema, Lab, Jeffrey and Ndungutse' 2012). Hence, this study seeks to assess the knowledge, attitude and TB-related social stigma among school adolescent in Ogoja urban in Cross River State, Nigeria.

2. Theoretical Framework

The Health Belief Model was originally developed in the 1950s by sociologists Hochbaum, Rosenstock and Kegels working in the public health sector in the United States of America. The model was developed in response to the failure of a free TB screening programme (Miller, 2007; Croyle, 2005). These authors first used the HBM to explain the impact of belief and attitude concerning protective health behaviour such as obtaining immunization and chest x-rays for TB (Ilongo, 2004). The HBM has since been further developed and applied to several health related behaviours, including health promotion behaviour (Ilongo, 2004) and more prominently to sexual risk behaviours and the transmission of HIV (Croyle, 2005). The HBM consists of six constructs which includes; perceived susceptibility (One's opinion of the chance of contracting a condition), perceived severity (One's opinion of the seriousness of a condition and its consequences), perceived barrier (One's opinion of the tangible and psychological costs of the advised action), perceived benefit (One's belief in the efficacy of the advised action to reduce risk or seriousness of impact), cues to action (Strategies to activate readiness) and self efficacy (Confidence in one's ability to take action).

It is interesting to note that some adolescent stated that everyone is substantially at risk of contracting TB (**Perceived susceptibility**) which may consequentially lead to morbidity and death (**Perceived severity**). Knowledge of TB, increase awareness level of TB, low utilization of health care and free treatment of TB can help ameliorate the scourge among school adolescent (**Perceived benefit**). Studies have shown that fear of re-infection, feeling ashamed, stigma and discrimination could contribute to delay in TB diagnoses and treatment (**Perceived benefit**). Regular advertisement of high mortality and free treatment of those who are infected using the media, school can trigger one's ability to adopt a desire positive behavior (**Cues to action**). In this study, school adolescent reported that they will go to the hospital for treatment immediately if infected (**Self-efficacy**).

3. METHODOLOGY

3.1 Study Setting

The study area is Ogoja urban in Ogoja Local Government Area. Ogoja Local Government Area is situated in the Northern part of Cross River State with an estimated population of 171,901 (NPC, 2006). Ogoja Local Government Area has 10 political wards with its headquarters at Ogoja town situated in the Northeast of the area. It has a land mass of 972km² (375sq kilometer and lies between latitude 5^o32¹ and 4^o27¹ North and longitude 7^o50¹ and 2^o20¹ East.

Ogoja Local Government Area is bounded by Yala Local Government Area to the west, Bekwara Local Government Area in the Southwest, Obudu Local Government Area in the East and Boki Local Government Area in the Southeast. There are two different climatic seasons in the area; the rainy season from March to October and the dry season from November to February. Most occupants of the area are traders, rural farmers and fishermen. It is predominantly a Christian area with few Muslims and traditional religious groups. Ogoja also consist of many tribes which includes Ishibori, Igoli, Mbube, Ekajuk and major communities such as Nwang, Ekopgrinya, Esham, Egbong, Nnang, Ewinimba and Bansara and mainly inhabited by Ekoi people. Basic infrastructure such as roads, markets and

schools are available in the local government area. Ogoja also has one secondary health facility, one private health facility and numerous primary health facilities across the area.

3.1.1 Study Population

The study population comprised of school adolescent (10 to 19 years) within Ogoja urban in Ogoja local government area of Cross River State, Nigeria

3.1.2 Study Design

A descriptive cross-sectional study was employed to assess knowledge, attitude and TB-related social stigma among school adolescent in Ogoja urban in Ogoja local government area of Cross River State, Nigeria from June to July 2013.

3.2 Sampling Procedure

Simple and systematic random sampling techniques were employed in the selection of schools and students respectively. Four public secondary schools within Ogoja urban were randomly selected using the lottery method. Class register was obtained in each selected school and systematic sampling technique was employed in selection of students whose names appeared on the register with even numbers. In each school, this procedure continues until 103 students have been duly selected across the six arms (SS1, SS2, SS3, JS1, JS2 & JS3) giving a total of 400 students from the four schools which became the actual sample size for the study. The sample size was increased to 412 to account for non-response bias and attrition.

3.2.1 Data Collection

A structured questionnaire was designed to generate quantitative data from respondents. The questionnaires were self-administered to respondents with both open and closed ended questions. The questionnaire comprised of 30 items and 4 sections with attention on socio-demographic characteristics, knowledge of tuberculosis, attitude of adolescent towards tuberculosis and tuberculosis prevention practices among respondents.

3.2.2 Data Analysis

The questionnaires were manually sorted out and analyze using Statistical Package for Social Science (SPSS, version 15.0) and Microsoft excel 2007. Data was summarized using frequency tables, graphs, means and standard deviations. Chi-square test was used to compare proportions and associations between variables.

3.3 Ethical Consideration

Approval was obtained from principals of selected schools. Informed consent was also obtained from students who participated in the study. Confidentiality of information elicited was assured and participation was strictly voluntary

4. RESULTS

Out of 412 questionnaires that were administered, only 400 questionnaires were returned and analyzed representing an acceptable response rate of 97.1%. Respondents in this study were predominantly within the age bracket of 15-19 years 224 (61.0%), Christians 382 (95.5%), males 227 (56.7%) and reside with both parents 139 (34.8%). One hundred and twenty four respondents said they stay with either only their mother or only their father (31.0%), while 129 respondents said they are currently staying with a guardian. Only 8 (2.0%) respondents reported that they stay alone (Table 1).

Table 1: Socio-demographic Characteristics of Respondents

VARIABLE	FREQUENCY	PERCENTAGE (%)
Age in years (n=400)		
10-14	104	26.0
15-19	244	61.0
>19	52	13.0
Religion (n=400)		
Christianity	382	95.5
Traditional Religion	18	4.5
Sex (n=400)		
Male	227	56.7
Female	173	43.3
Classes (n=400)		
SS1	82	20.5
SS2	106	26.5
SS3	51	12.7
JS1	50	12.6
JS2	51	12.7
JS3	60	15.0
Reside with (n=400)		
Both parents	139	34.8
Single parent	124	31.0
Guardian	129	32.2
Live alone	8	2.0

In table 2, about 388 (97.0%) claimed to have heard of tuberculosis before of which the media (radio/TV) 141 (34.1%), teachers 129 (31.2%) and health workers 79 (19.1) were their top three source of information. Other sources of information about tuberculosis recorded in the study were parents 34 (8.2%), friends 19 (4.6%), church 9 (2.1%) and market 3 (0.7%). Out of 400 respondents, only 35 (8.7%) reported to have suffered tuberculosis before of which all 35 respondents claimed to have received treatment. In an attempt to define tuberculosis, most respondents 135 (33.8%) defined tuberculosis as a “disease that causes prolong cough”. Others defined tuberculosis as “an air borne disease” 121 (30.2%), “a disease that kills” 79 (19.7%) and “a communicable disease” 65 (16.3%).

Most respondents reported that prolong cough 152 (37.7%) was the major sign and symptoms of tuberculosis. Others said chest pain 82 (20.3%), weight loss 48 (11.9%), weakness 46 (11.4%) and loss of appetite 33 (8.2%) were related signs and symptoms of tuberculosis. About 28 (6.9%) reported lack of knowledge of tuberculosis signs and symptoms. While one hundred and twenty-two respondents felt smokers were more at risk of contracting tuberculosis, 90 (22.5%) felt people who drink alcohol are more at risk. Sixty-six in their opinion felt everyone is substantially at risk of contracting tuberculosis. However, 66 (16.5%) said they have no idea of who is at risk or not. Knowledge of causes of tuberculosis was duly exhibited as a larger proportion of the respondents said drinking of alcohol 134 (33.5%) causes tuberculosis. Others said that bacteria 103 (25.8%), virus 45 (11.2%), dirty water 7 (1.8%) and eating certain food 5 (1.2%) are causes of tuberculosis. About 104 (26.0%) reported that they have do not know what causes tuberculosis. More than two-third of the respondents 381 (95.2%) are aware that tuberculosis can be transmitted from one person to another.

Table 2: Knowledge of Tuberculosis among Respondents

VARIABLE	FREQUENCY	PERCENTAGE (%)
Ever heard of tuberculosis (n=400)		
Yes	388	97.0
No	12	3.0
Source of Information (n=414)		
Parents	34	8.2
Teachers	129	31.2
Radio/TV	141	34.1
Friend	19	4.6

Health Worker	79	19.1
Church	9	2.1
Market	3	0.7
Ever suffered from Tuberculosis (n=400)		
Yes	35	8.7
No	365	91.3
Received treatment from Tuberculosis (n=35)		
Yes	35	100
No	-	-
What is Tuberculosis (n=400)		
It is an Airborne diseases	121	30.2
It is a disease that kills	79	19.7
It is a communicable disease	65	16.3
It is a disease that causes prolong cough	135	33.8
Signs and Symptoms of Tuberculosis (n=404)		
Fever	10	2.4
Night sweat	5	1.2
Weight loss	48	11.9
Weakness	46	11.4
Prolonged cough	152	37.7
Loss of appetite	33	8.2
Chest pain	82	20.3
Does not know	28	6.9
Group of people likely to suffer Tuberculosis (n=400)		
People that are homeless	24	6.0
Smokers	122	30.5
People that drink alcohol	90	22.5
Everyone	66	16.5
HIV infected individuals	6	1.5
People with low socio-economic status	6	1.5
People with weak immune system	8	2.0
People living in crowded environment	8	2.0
Children	4	1.0
Does not know	66	16.5
Causes of Tuberculosis (n=400)		
Drinking of alcohol	134	33.5
Dirty water	7	1.8
Eating certain food	5	1.2
Mosquito bite	2	0.5
Bacteria	103	25.8
Virus	45	11.2
Does not know	104	26.0
Knowledge of Tuberculosis Transmission (n=400)		
Yes	381	95.2
No	19	4.8

Knowledge of route of tuberculosis transmission was highly recognized as most respondents reported that staying close to someone with TB 179 (47.0) especially if the patient sneezes, spits, sings or cough 278 (73.0). Others were not sure if tuberculosis can be transmitted by shaking of hands 138 (36.2%), eating with a TB patient 149 (40.0%) and playing with a TB patient 152 (39.9). About 372 (93.0%) respondents agreed to the fact that tuberculosis can be avoided mainly by covering the nose and mouth at all times 108 (29.0%), staying away from suspected TB patient 101 (27.2) and by avoiding crowded environment 100 (26.8%). Fifty-two respondents had no idea of how tuberculosis can be avoided. Most respondents 362 (90.5%) also agreed that tuberculosis can be treated using antibiotics 156 (43.1%). Others said that tuberculosis can be treated using herbs 46 (12.7%) and Aspirin 28 (7.7%). As large as 116 (32.0%) were not knowledgeable of how tuberculosis can be treated (Table 3)

Table 3: Knowledge of Tuberculosis Transmission Mode, Treatment and Prevention among Respondents (n=381)

VARIABLE	FREQUENCY (PERCENTAGE)			
	YES	NO	NOT SURE	TOTAL
Staying close to someone with TB	179 (47.0)	94 (24.7)	108 (28.3)	381 (100)
Shaking hands with a TB patient	99 (26.0)	144 (37.8)	138 (36.2)	381 (100)
When a TB patient coughs, sneezes, sings or spits	278 (73.0)	49 (12.8)	54 (14.2)	381 (100)
Eating with a tuberculosis patient	88 (23.0)	141 (37.0)	149 (40.0)	381 (100)
Playing with a tuberculosis patient	85 (22.4)	144 (37.7)	152 (39.9)	381 (100)
Can tuberculosis be avoided (n=400)				
Yes	372		93.0	
No	28		7.0	
Ways tuberculosis can be avoided (n=372)				
By covering the nose and mouth at all times	108		29.0	
By staying away from suspected TB patient	101		27.2	
By avoiding crowded environment	100		26.8	
By staying away from sick people	11		3.0	
Does not know	52		14.0	
Can tuberculosis be cured (n=400)				
Yes	362		90.5	
No	38		9.5	
Drugs used to treat tuberculosis(n=400)				
Herb/traditional medicine	46		12.7	
Aspirin	28		7.7	
Antibiotics	156		43.1	
Amalar	16		4.4	
Does not know	116		32.0	

Respondent showed a considerable attitude towards tuberculosis as majority of the respondents strongly subscribed to the fact that tuberculosis is a disease that kills 139 (34.7%), adolescent should visit the nearest hospital for treatment if they notice they are infected with TB 245 (61.2%) and tuberculosis patients should be kept in a separate environment 165 (41.2%). On the other hand, most respondents strongly disagreed to the fact that treatment of tuberculosis is free 122 (30.5%) and tuberculosis is a disease of only the elderly people 178 (44.5%) (Table 4).

Table 4: Attitude of Respondents towards Tuberculosis (n=400)

VARIABLES	FREQUENCY (PERCENTAGE)				
	Strongly Agreed	Agreed	Not sure	Strongly disagreed	Disagreed
Tuberculosis is a disease that kills	139 (34.7)	129 (32.2)	76 (19.0)	38 (9.5)	18 (4.5)
Adolescent should go to the nearest hospital for treatment if they are infected with TB	245 (61.2)	133 (33.2)	18 (4.5)	-	4 (1.0)
People with Tuberculosis should be kept in a separate environment	165 (41.2)	80 (20.0)	115 (28.7)	20 (5.0)	20 (5.0)
Treatment of Tuberculosis is free	61 (15.2)	62 (15.5)	138 (34.5)	122 (30.5)	17 (4.2)
Tuberculosis is a disease of only the elderly people	13 (3.2)	16 (4.0)	66 (16.5)	178 (44.5)	127 (31.7)

Table 5 showed that, more than two-third majority 318 (79.5%) reported that they will go to the hospital for treatment in the event of any tuberculosis attack. Others said they will consult a herbalist or subscribed to traditional treatment 29 (7.2%), just pray or take spiritual water for healing 24 (6.0%) and 6 (1.5%) said they will ignore the signs and hope to get well. However, about 23 (5.8%) respondents reported having no idea of what to do if they suffer tuberculosis. More than half of the respondents 260 (65.0%) said they will advice the person to go for treatment

immediately if they see any friend of theirs that is suffering from tuberculosis. Others suggested that if they see any friend of theirs that is suffering from tuberculosis, stay away from the person 48 (12.0%), report the person to the school authority 47 (11.8%), pray for the person 34 (8.5%) and stay with the person and console him or her 11 (2.7%). Current measures in practice to avoid getting tuberculosis as reported by the respondents were avoiding of crowded environment 144 (36.0%), avoid eating, talking and sharing the same bed with a TB patient 126 (31.5%) and reporting suspected TB cases to the school authority 42 (10.5%). About 88 (22.0%) respondents reported no measure in practice to avoid contracting TB.

Based on social stigma and discrimination, most respondents reported that, if they eventually find out that they have TB 289 (72.7%), they wouldn't tell anyone about it; or if a family member of theirs suffers from TB, they will not allow their neighbours to hear of it 317 (79.2%). Most respondents 332 (83.0%) also stated that if a food vendor which they buy food/snacks from has tuberculosis, they would discontinue from patronizing the person. Hence, stigma and discrimination of TB is proportionally high among school adolescent in Ogoja urban.

Table 5: Practices of Tuberculosis Prevention and Social Stigma among Respondents

VARIABLES	FREQUENCY	PERCENTAGE (%)
What to do if you notice you have tuberculosis (n=400)		
Consult a herbalist for cure	29	7.2
Go to the hospital for treatment	318	79.5
Just pray	24	6.0
Ignore the signs	6	1.5
No idea	23	5.8
What to do if you notice a friend of yours have tuberculosis (n=400)		
Stay away from the person	48	12.0
Report him/her to school authority	47	11.8
Advice the person to go for treatment	260	65.0
Stay with the person and console him/her	11	2.7
Pray for the person	34	8.5
Current measures in use to avoid getting tuberculosis (n=400)		
Avoiding crowded environment	144	36.0
Reporting suspected cases of TB to school authority	42	10.5
Avoid eating, talking and sharing the same bed with TB patient	126	31.5
None	88	22.0
If you have TB, will you be willing to tell your friends about it		
Yes	11	27.7
No	289	72.3
If a family member of yours have TB, will you be willing to tell your Neighbours about it (n=400)		
Yes	83	20.8
No	317	79.2
If you are told that a food vendor which you buy food/snacks from have tuberculosis, would you continue buying food/snacks from that person (n=400)		
Yes	68	17.0
No	332	83.0

5. DISCUSSION

This study recorded a low knowledge level of tuberculosis among school adolescent. More than two third of the respondents claimed to have heard of tuberculosis with the media (radio/television) (34.1%) and teachers (31.2%) as their major source of information. This finding is consistent with a study carried out in Tehran where high school students reported that radio and television were their main source of information on TB (Hadi, Jalilvand & Hadian, 2005). This may be attributed to high and regular awareness campaign of TB via the media within the locality. Teachers were also useful channels in information dissemination especially as it concerns TB. Additionally, respondents who said the media was their major source of information had higher knowledge level of TB than others. Out of 400 respondents,

only 35 (8.7%) reported to have suffered from TB before and also reported to have received treatment. This finding corroborates that of Tanimowo (1999) where about 8.3% of senior secondary school students reported to have been infected with TB. In an attempt to define what tuberculosis means, majority (33.8%) stated that “tuberculosis is a disease that causes prolong cough”.

Others defined TB as an air borne disease (30.2%), a disease that kills (19.7) and about 16.3% perceived it to be an infectious disease. Judging from this definition, school adolescent within Ogoja do not know the actual definition of TB. Hence, health education curriculum in schools should include the study of endemic diseases such as TB, HIV/AIDS etc. Respondents knew that prolong cough (37.7%) and chest pain (20.3%) were top symptoms of TB. This result disagrees with that of Tasnim, Rahman & Hoque, (2012) where Night fever was the most common identified symptom of TB and consistent with a study carried out in Delhi, where 90.1% identified cough as a symptom of TB (Sharma, Malhotra, Taneja, Saha & Ingle, 2007) . Most respondents (30.5%) acknowledged that smokers are more at risk of contracting TB. About 22.5% on the other hand identified people that drink alcohol as high risk group for TB. Only 16.5% knew that everyone is at risk of contracting TB, but 16.5% have no idea of who is at risk or not. This probably suggest that most school adolescent do not see themselves at risk of contracting TB and this may affect effective prevention practices and utilization of health care. Knowledge of causes of TB was fairly distributed as 33.5% said drinking of alcohol is the main cause of TB. One fourth of the respondents said they have no idea of what causes TB. Only 25.8% identified bacteria as the cause of TB. This poor knowledge of cause of TB is similarly reported in other studies (Obuku, Meynell, Kiboss-Kyeyune, Blankley, Atuhairwe, Nabankema, Lab, Jeffrey & Ndungutse, 2012; Abebe, Biffa, Bjune, Ameni, Abebe, 2011). In terms of TB transmission, most respondents supported the fact that TB can be transmitted from one person to another mainly by air droplet when a TB patient coughs, sneezes, spits or sings (73.0%) and by staying close to someone with TB (47.0%). This high knowledge of TB transmission is similarly reported by Sharma *et al* (2007). The adequate knowledge exhibited by respondents on TB transmission may be attributed to regular advertisement on the media and personal experience by respondents who have suffered TB before. Out of 93.0% respondents that agreed to the fact that TB can be avoided, 29.0% TB could be avoided by covering the nose and mouth when coughing or sneezing, 27.2% suggested that staying away from TB patient could prevent one from having TB. About 90.5% knew that TB can be treated but only 43.1% knew that antibiotics are the medication for treating TB. About 32.0% do not know any treatment regimen for TB patient. This poor knowledge in TB treatment substantially contributes to the poor health indices of the country. Hence, in order to enhance the achievement of Millennium Development Goals by 2015, health education curriculum must incorporate certain facts of key endemic disease such as TB, HIV etc. so that school adolescent will utilize the privilege to be informed of certain facts about infectious diseases that is endemic in our locality. Although TB awareness and transmission knowledge was reported high, knowledge of TB causes, treatment and prevention was reported low in this study.

In this study most respondents had a positive attitude towards TB. About 61.2% felt that adolescent should go to the nearest hospital for treatment if they are infected with TB and less than half of the respondents (34.7%) felt tuberculosis is a disease that kills. While most respondents suggested that TB patient should be isolated from non-TB patient, 30.5% disagreed to the fact that TB treatment is free. This poor awareness level of free TB treatment may be reported by those who do not have access to the radio or television and this may trigger delay in seeking health care if they eventually get infected. For adolescents resident in poor rural settings, teachers and billboards or posters can serve as a channel of information on TB treatment and prevention. This favorable attitude of adolescent towards TB is similarly reported by Hadi *et al* (2005).

More than half of the respondents reported that advising a TB patient to go for treatment is their current measure of prevention from contracting TB. Others said staying away from TB patients (12.0%), reporting suspected cases to the school authority (11.8%) and praying for the person (8.5%) are measures they are employing to avoid getting TB. This report indicates that practices of TB prevention is high among school adolescent in Ogoja urban. This result disagrees with other studies where poor prevention practices of TB was recorded (Hashim DS, Al Kubaisy W, Al Dulayme A, 2003; Tanimowo, 1999).

Social stigma and discrimination against TB patient is reported high among school adolescent in this study. About 72.3% reported that they will not be willing to tell their friends if they eventually get infected; 79.2% said they will not tell anyone if a family member of their gets infected and 83.0% reported that if a food vendor which they usually buy food or snacks from is reported infected with TB, they will stop buying food from that person. The high stigma and discrimination was also reported in other studies (Dhingra & Khan, 2010; Gelaw, Genebo, Dejene, Lemma And Eyob, 2001). According to a systemic review by Courtwright and Truner (2010), the most common cause of TB stigma is the perceived risk of transmission from TB-infected individuals to susceptible community members. Depending on geographic region, however, TB is also stigmatized because of its associations with HIV, poverty, low social class, malnutrition, or disreputable behavior. TB stigma has a more significant impact on women and poor or less-educated community members, which is especially concerning given that these groups are often at higher risk for health disparities.

6. CONCLUSION

This study recorded a high awareness and transmission knowledge of TB, but knowledge of TB causes, treatment and prevention were reported low among school adolescent in Ogoja urban. Social stigma of TB patient was also reported high. Age, sex and sources of information were significant determinants of TB knowledge, attitude and related social stigma among adolescent. Hence, the public health system owes the responsibility of intensifying awareness campaigns on endemic infectious diseases like TB in schools. Teachers should also be trained intermittently on key diseases such as TB and HIV/AIDS and be provided with regular updates on their prevention strategies so as to effectively impact the students. Further research should be carried out on the impact of TB stigma on TB diagnostic delay, treatment compliance, and morbidity and mortality.

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ABBREVIATION

TB-Tuberculosis, **WHO**-World Health Organization, **HIV**-Human Immunodeficiency Virus, **AIDS**-Acquired Immune Deficiency Syndrome. **HBM**-Health Belief Model

REFERENCES

- Abebe D. S., Biffa D, Bjune G., Ameni G., Abebe F.(2011): Assessment of knowledge and practices about tuberculosis among eastern Ethiopian prisoners. *Int J Tubercu Lung Dis* 15 (2):228-33
- Birn A. (2009). *Textbook of International Health: Global Health in a Dynamic World*. p. 261. ISBN 9780199885213.
- Courtwright A. Turner N. A. (2010): Tuberculosis and Stigmatization. Pathways and Intervention. Public Health Reports. Suppl 4 vol 125.
- Croyle, R.T 2005. Theory at a glance: a guide for health promotion practice. 2nd edition. US department of health and human service.
- Dhingra V. Khan S. (2010): A sociological study on stigma among TB patients in Delhi. *Indian J Turberc* 57 (1):12-8
- Dolin, [edited by] Gerald L. Mandell, John E. Bennett, Raphael (2010). *Mandell, Douglas, and Bennett's principles and practice of infectious diseases* (7th ed.). Philadelphia, PA: Churchill Livingstone/Elsevier. pp. Chapter 250. ISBN 978-0-443-06839-3
- FitzGerald, JM; Wang, L, Elwood, RK (2000). "Tuberculosis: 13. Control of the disease among aboriginal people in Canada". *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne* 162 (3): 351-5.
- Gelaw M., Genebo T., Dejene A., Lemma E., Eyob G. (2001): Attitude and social consequences of tuberculosis in Addis Ababa, Ethiopia. *East African Medical Journal* Vol. 78 No. 7
- Hadi M. A. E., Jalilvand M., Hadian M. (2006): Assessment of the amount of knowledge and attitude of tehran High school students regarding tuberculosis. *Tanaffos* 5(4): 23-28
- Hashim D. S., Al Kubaisy W., Al Dulayme A. (2004): Knowledge, Attitude and Practices Survey among Health Care Workers and Tuberculosis Patients in Iraq. *East Mediterr Health J.* 9 (4):718-31
- Ilongo, I. 2004. Tuberculosis health belief gaps of tuberculosis and suspected tuberculosis cases in New York City. *International journal of clinical and health psychology*, 4(1): 69-90.
- Kumar V, Abbas AK, Fausto N, Mitchell RN (2007). *Robbins Basic Pathology* (8th ed.). Saunders Elsevier. pp. 516-522. ISBN 978-1-4160-2973-1.
- Lawn, SD; Zumla, AI (2011). "Tuberculosis". *Lancet* 378 (9785): 57-72.
- Miller, J.A. .2007. The perception and belief of health care worker about clients with tuberculosis. Unpublished master's thesis. University of Auckland New Zealand
- Obuku E. A, Meynell C, Kiboss-Kyeyune K., Blankley S. Atuhaurwe C., Nabankema E., Lab M., Jeffrey N., Ndungutse D. (2012): Socio-demographic Determinants and Prevalence of Tuberculosis Knowledge in three Slum Population of Uganda. *BMC public Health* 12:536 1471-2458.
- Rosenstock, I.M. 1974. Historical origins of the Health Belief Model. *Health Education Monographs*, 2(4):328-335.

- Sharma N. Malhotra R., Taneja D. K., Saha R., Ingle G. K. (2007): Awareness and perception about tuberculosis in the general population of Delhi. *Asian Pacific Journal of Public health*. 19 (2):10-15.
- Tanimowo M. O. (1999): Knowledge, Attitude and Practices regarding tuberculosis among senior secondary school student. *East Afri Med J*. 76(1):47-50
- Tasnim S. Rahman A., Hoque F.M. A. (2012): Patient's knowledge and Attitude towards tuberculosis in an urban setting. *Pulmonary medicine*. doi 10.1155/2012/352856
- World Health Organization (2009). "Epidemiology". *Global tuberculosis control: epidemiology, strategy, financing*. pp. 6–33. ISBN 978-92-4-156380-2. Retrieved 12 November 2009.
- World Health Organization (2011). "The sixteenth global report on tuberculosis"
- World Health Organization. (2008): Global tuberculosis control". Retrieved 13 April 2009.
- World Health Organization. (2006) "Global Tuberculosis Control Report, 2006 – Annex 1 Profiles of high-burden countries" (PDF). Retrieved 13 October 2006.