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Beliefs towards Tuberculosis among Patients in DOTS Centres in Nsukka LGA of Enugu State, Nigeria

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Abstract
Patients' beliefs about their illness in most cases determine where such people go to seek for care. The purpose of the study was to determine beliefs towards tuberculosis (TB) among TB patients in Nsukka Local Government Area of Enugu state, Nigeria. Descriptive survey was employed. The study population and sample consisted of all 206 TB patients attending Directly Observed Treatment Shortcourse (DOTS) centres in the study area at the time of the study. Structured questionnaire known as Beliefs About Tuberculosis Questionnaire (BATQ) was used to collect data. Statistical Package for the Social Sciences (SPSS) version 21 was used to analyze 201 correctly filled instruments. Frequencies and percentages were used to answer the research questions while chi-square statistics was used to test the null hypotheses at .05 level of significance. Results of the study indicated that only 37.8 per cent and 19.1 percent of respondents had correct beliefs about cause and duration of TB respectively while most had correct beliefs about consequences (75.6%) and cure or control (93.5%) of TB. There were significant differences in the beliefs about TB based on the variables of age and location ($p < .05$). False beliefs about cause and duration of TB revealed in this study might prevent TB patients from participation in health promotional activities because of stigma attached to the disease. Therefore it was recommended that public health educators as well as other health workers should use all available settings to disseminate health information especially on preventable diseases like tuberculosis in other to enhance positive beliefs about TB and subsequently lead to control of the disease.
Key words: Tuberculosis, Patients, Beliefs, Stigma, Misconception

Introduction

The spread of infectious diseases including tuberculosis (TB) impairs health promotional activities. Most infectious diseases including TB result in widespread epidemics with high mortality and morbidity. The magnitude of TB remains high worldwide especially in developing countries (Ismail & Josephat, 2014). According to World Health Organization WHO (2015), tuberculosis is second only to HIV and AIDS as the greatest killer worldwide due to a singular infectious agent. Nigeria is ranked fourth in TB incidence among the 30 high burden countries globally and first in the African region (WHO, 2016).

Tuberculosis is a chronic infectious disease caused by bacteria, generally referred to as *mycobacterium tuberculosis*. Konstanstinos (2010) stated that TB is spread through the air when people who have active infection cough, talk, sneeze or sing. These people release tiny droplet nuclei containing the tubercle germ. Transmission is through inhalation of these droplet nuclei. The cardinal symptoms of pulmonary TB is persistent cough for two or more weeks accompanied by one or more of the following: weight loss, tiredness, fever, night sweats, chest pain, shortness of breath, loss of appetite and coughing up blood (Federal Ministry of Health, 2008). The disease can be prevented by a number of preventive measures including cough etiquette and some health promotional activities like regular exercise to boost individuals' immunity. Tuberculosis can be effectively treated by a combination of several antibiotics using the Directly Observed Treatment short course (DOTs) according to the National Tuberculosis and Leprosy Control Programme (NTBLCP) guideline (Federal Ministry of Health, 2008). Infection with HIV is the most powerful risk factor for developing TB. Tuberculosis re-emerged in recent times because of its close association with HIV infection. There are numerous wide spread erroneous beliefs about TB.

Beliefs can be viewed as ideas, viewpoints and attitudes of the particular group of society. According to Schwitzgel (2006), belief is the state of mind in which a person thinks something to be the case, with or without there being empirical evidence to prove that something is the case with factual certainty. In other words, belief is when someone thinks something is reality, true when they have no absolute verified foundation for their certainty of the truth or realness of something. Beliefs are transmitted from other people like parents, teachers, peer group, friends, family, media, religion, society and from anyone who had or still have influence over us (Kemenye 2008).

Research suggests that how a person views his illness may play a bigger role in determining his health outcome than the actual severity of the illness (Weinman, Petrie, Moss-Moris & Horne, 1996). The Association for Psychological Science (2012) posited that in general, our illness perceptions emerge out of our belief about illness and what illness means in the context of our lives. It further stated that we might have belief about how illness is caused, how long it will last, how it will impact on us or on our family members, how we can control or cure it. According to Schwitzgel (2006), there appears to be four main aspects to a patients beliefs about illness: the nature of the illness- beliefs about cause, meaning of the illness and symptoms; the future course of that illness, that is duration and outcome; the consequences of the illness on the patient's life and work; cure or control- beliefs about expectations and personal responsibility associated with treatment of the illness. For instance, some patients believe that TB is caused by dust or witchcraft, that it is hereditary, it lasts a life time or can be cured by traditional medicine (Kamenye, 2008; Ediginton, Sekatane,& Goldstien 2002; Promtussananon & Peltzer 2005). These are some of the erroneous beliefs about TB which represent misconceptions resulting from incorrect reasoning. Beliefs in this study refer to convictions held by tuberculosis patients or statements they make regarding tuberculosis. The four aspects of patients' beliefs about illness identified above (belief about cause; duration; consequences and cure or control) were utilized in this study.

Misconceptions about tuberculosis disease can create stigma and panic in the community (Eram, Khan, Tamanna, Khan, Khaliq & Abidi 2006). Evidence both in research and practice shows that stigma associated with TB is universal (Milar, 2007). According to Parker and Aggleton, (2003), stigma is a social process worsening already existing inequality and exclusions. Social stigma is recognized as an important barrier for successful care of clients with TB. Two types of stigma have been identified in association with TB; enacted stigma and perceived stigma (Milar, 2007). Enacted stigma relates to discrimination due to social inferiority while perceived stigma or internalized stigma is feeling of inferiority as a result of fear of enacted stigma (Eastwood; & Hill, 2004). This can be demonstrated by TB clients refusing to disclose their diagnosis to others or feeling ashamed of having TB. This consequently leads to delay in seeking care or non-compliance to TB control strategy. Stigma attached to TB is caused by the severity of the illness, the public fear of contracting TB through casual transmission and by being confused with HIV/AIDS which is associated with perceived sexual misconduct (Sermrittirong, Brakel, Kraipui, Traithip, & Bunders Aelen, 2015). Presence of stigma in TB is therefore largely responsible for misconception of TB. Because of this, the fear of social and economic consequences following diagnosis of TB can make individuals reluctant to seek and complete medical care (Courtwright; & Turner, 2010).

Furthermore, delayed presentation of TB suspects to health facility for care can increase the incidence of the disease in the community. Factors that may lead to misconceptions are ignorance, poverty, lack of information on where to access TB care. Other demographic factors like age, gender, marital status can affect beliefs towards TB among TB patients. Social factors like level of education, location, availability of services, culture and accessibility of services equally influences beliefs about tuberculosis. In this study, the factors investigated were age and location.

Age is an important variable in beliefs about tuberculosis. Ismail and Josephat, (2014) described that older people were likely to have better beliefs about TB due to their life experiences. Aniebue (2008) equally stated that age influences beliefs about an illness and that older people tolerate illness more than younger ones because they are conscious of the fact that their bodies are degenerating and it is usual to experience certain symptoms of illness. The finding of differences in beliefs towards TB among TB patients according to age will help health educators and TB program managers to know which age group to pay particular attention to as regards correction of erroneous beliefs in order to enhance TB control. Location in this study can be rural or urban. Availability of health facilities is more in urban areas which may increase accessibility of care and predisposes residents to more health information which can influence their beliefs than those in rural areas. Otu, (2013) opined that accessibility is limited by centralization of TB control activities with less activity in rural areas. There is also huge rate of overcrowding in urban slums which is a very fertile ground for TB transmission and this will consequently increase the number of TB patients locally and nationally.

A TB patient is a sick person suffering from active TB disease. The person must have been diagnosed of active TB and is waiting for care or is receiving the care or have received the care already. Adult TB patients were used in the study. Enemo (2008) defined legal adult as reaching the age of majority. The above author further described that the age of majority is the legally defined age at which a person is considered an adult with attendant rights and responsibilities of adulthood. Such age varies by state but is 18, in most states. It is also the age at which a person is liable for his or her own action such as contractual obligation or liability for negligence. The legal age of an adult which is 18 years was adopted. This is because at 18 years, a person is considered ripe to take decisions pertaining to the person's life and is held responsible for whatever action he takes. Such an individual is then

entitled to his personal beliefs about TB. The Association for Psychological Science (2012) stated that whenever we fall ill, there are many different factors (including beliefs) that come together to influence the course of our illness. Beliefs towards TB among TB patients will go a long way in controlling TB disease. This is because TB patients are sources of TB infection. Correct beliefs about TB by TB patients will make them to practice certain preventive measures like cough etiquette to prevent transmission to others and adhere strictly to TB treatment to prevent development of multi drug resistant TB (MDR-TB). TB patients are readily found in DOTs centres where they access care nationwide.

Patients in some locations according to literature assertions (Promtussananon; & Peltzer, 2005, Otu, 2013, Ismail; & Josephat, 2014) seem to have misconceptions about TB which makes case detection of the disease very low despite high national figures. This might be as a result of stigma and beliefs associated with TB, inaccessibility of DOTS centres, or inappropriate information on the disease. Equally, despite all efforts to control TB in Nigeria, TB still remains a major public health problem. It is against this backdrop of misconceptions about TB and inappropriate information about the disease that the researcher is prompted to study beliefs towards TB among TB patients in Nsukka LGA of Enugu State. Consequently, the purpose of the study was to ascertain TB patients' beliefs towards tuberculosis. Specifically, the study sought to;

1. ascertain beliefs towards tuberculosis among TB patients in Nsukka LGA,
2. find out beliefs towards tuberculosis among TB patients based on age,
3. find out beliefs towards tuberculosis among TB patients based on location.

Research Questions

1. What are the beliefs towards tuberculosis among TB patients in Nsukka LGA?
2. What are the beliefs towards tuberculosis among TB patients based on age?
3. What are the beliefs towards tuberculosis among TB patients based on location?

Hypotheses

The following null hypotheses were postulated to guide the study and were tested at .05 level of significance and at appropriate degree of freedom.

1. There is no significant difference in beliefs towards tuberculosis among TB patients based on age.
2. There is no significant difference in beliefs towards tuberculosis among TB patients based on location.

Methods

Study design

The study adopted descriptive survey research design. Nwagu (2005) posited that descriptive survey design is employed in studies designed to describe the characteristics or attributes of a population. This design was utilized by Kemenye (2008) in a similar study on knowledge, beliefs and practices of patients diagnosed with tuberculosis in Katutura, Khomas Region, Namibia. The design is therefore considered appropriate for use in the present study.

Area of the study

The study was carried out in Nsukka LGA of Enugu state. There are nine DOTs centres in the LGA that provide services for TB patients and suspects. Three of the DOTs centres are located in Nsukka town which is predominantly urban while six are in the rural locations. There are different people of varied culture residing in Nsukka LGA due to the presence of a federal institution. The researcher observed that there is denial of TB diagnosis by people when diagnosed with active TB. Equally, those that tend to accept their TB diagnosis attributes the cause to supernatural force or poison rather than biomedical cause hence the need to study the area.

Population and sample

The population for the study consisted of all 206 TB patients receiving TB services in the DOTS centres in Nsukka LGA at the time of the study. No sampling was done hence all the 206 TB patients in the DOTS clinics were used for the study.

Instrument for data collection

Researchers' designed Beliefs about Tuberculosis Questionnaire (BATQ) was the instrument used to collect quantitative data. The instrument comprised two sections. Section A solicited information on personal data of the respondents' age, educational level, gender and location while section B sought information on beliefs about TB. The instrument was a four point scale of very true of what I believe, true of what I believe, untrue of what I believe and very untrue of what I believe. Three research experts from the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka validated the instrument. The reliability of BATQ was

established using split half method and Spearman Rank Order correlation co-efficient. A reliability co-efficient of .70 was obtained and this was considered high enough. This was because Nwagu, (2005) asserted that a reliability coefficient of .60 and above is high enough for use in a study.

Data collection and analysis

Informed consent was obtained verbally from respondents prior to data collection. Anonymity and confidentiality were ensured. Ethical clearance was granted by the Research and Ethics Committee, State Ministry of Health Enugu, Nigeria (Ref no: MH/MSD//EC/0222). The BATQ were administered to TB patients as they visited the DOTs clinics for TB services from September 2015 to March 2016. Data collected were coded and analyzed using SPSS version 21. 201 copies of the instrument were used for analysis. Five copies of the questionnaire were discarded due to mutilations. In determining the beliefs of respondents, very true of what I believe and true of what I believe were collapsed to represent true while very untrue of what I believe and untrue of what I believe were collapsed to represent untrue. A response of true to positive statement was interpreted as correct belief while untrue was interpreted as false belief. The reverse was the case for negative statement. Afterwards, frequencies and percentages were used to answer research questions. Chi-square statistic was used to test the null hypotheses at .05 level of significance and appropriate degree of freedom.

Results

Table 1: Beliefs towards Tuberculosis among TB Patients (n=201)

Belief components	**Responses**	
	False f(%)	**Correct f(%)**
Beliefs about causes of TB		
1. Germ or bacteria	51(25.4)	150(74.6)
2. Evil eye or witch craft	136(67.7)	65(32.3)
3. Poison by other people	120(59.7)	81(40.3)
4. Smoking and alcohol	128(63.7)	73(36.3)
5. Pollution in the environment	126(62.7)	75(37.3)
Overall percent	**125(62.2)**	**76(37.8)**
Beliefs about duration of TB		
6. TB will last a short time	79(39.3)	122(60.7)
7. Is likely to be permanent rather than temporary	156(77.6)	45(22.4)
8. Will last a long time	104(51.70	97(48.3)
9. Will last for the rest of my life	169(84.1)	32(15.9)
10. Will be off and on in my life	148(73.6)	53(26.4)
Overall percent	**161(80.1)**	**40(19.1)**
Beliefs about consequences of TB		
11. TB can lead to death if not well treated	25(12.4)	176(87.6)
12. TB has strongly affected the way others see me	69(34.3)	132(65.7)
13. TB has serious economic and financial consequence	89(44.3)	112(55.5)
14. TB has strongly affected the way I see myself	47(23.4)	154(76.6)
15. Many people are avoiding me because of TB	123(61.2)	78(38.8)
Overall percent	**49(24.4)**	**152(75.6)**
Beliefs about cure or control of TB		
16. TB is better cured by traditional medicine	163(81.1)	38(18.9)
17. The drug I am taking now will be effective in curing my illness	12(6.0)	189(94.0)
18. Recovery from this illness is largely dependent on chance or fate	115(57.2)	86(42.8)
19. TB spread can be prevented by my practices	27(13.4)	174(86.6)
20. How I comply with my medications will determine whether my illness gets better or worse	8(4.0)	193(96.0)
Overall percent	**13(6.5)**	**188(93.5)**

In table 1 above, 37.8 percent of respondents had correct beliefs about causes of TB. However, majority (74.6%) believe that TB is caused by germ. Nineteen point one percent (19.1%) have correct beliefs about TB duration but more than half (60.7%) believe that TB will last a short time. Equally, the table shows that majority of the respondents (75.6%) had correct beliefs about consequences of TB while most (93.5%) had correct beliefs about cure and control of TB.

Table 2: Beliefs towards TB among TB Patients Based on Age (n=201)

Belief Components	**Correct beliefs Age range**								
	18-24yrs	**25-44yrs**	**45-60**	**45-60**	***X²***	**df**	**p-val**		**dec**
	n=81 f(%)	**n=64 f(%)**	**n=36 f(%)**	**n=20 f(%)**					
Cause	20(24.7)	31(48.4)	19(52.8)	6(30)	12.955	3	.005	**	
Duration	15(18.5)	9(14.1)	15(41.7)	1(5.0)	14.951	3	.002	**	
Consequences	50(61.7)	48(75.0)	34(94.4)	20100)	21.861	3	.000	**	
Cure or control	71(87.7)	63(98.4)	36(100)	18(90)	10.074	3	.018	**	

Key: **significant at p<.05.

From the above table, higher proportion of respondents aged 45-60 years had correct beliefs about cause (52.8%), duration (41.7%) and cure or control of TB(100%). Respondents aged above 60 years have the highest correct belief about consequences of TB. The differences in the belief components studied were significant at .05 level of significance, cause ($p=.005 < .05$), duration ($p=.002 < .05$), consequences ($p=.000 < .05$), cure or control ($p=.018 < .05$). This implies that beliefs about cause, duration, consequences and cure or control of TB differs according to different age group

Table 3: Beliefs towards TB among TB Patients Based on Location (n=201)

Belief components	**Correct beliefs Location**						
	Urban n=102 f(%)	**rural n=99 f(%)**	***X²***	**df**	**p-val**		**decision**
Cause	30(29.4)	46(46.5)	6.213	1	.013	**	
Duration	17(16.7)	23(23.2)	1.359	1	.244	*	
Consequences	63(61.8)	89(89.9)	25.571	1	.000	**	
Cure or control	101(99.0)	87(87.9)	10.308	1	.001		**

Key: *not significant, **significant at p<.05.

The table 3 above shows that higher proportion of respondents in rural location had correct beliefs about cause (46.5%), duration (23.2%), and consequences (89.9%) of TB while greater percent of respondents in urban location have correct beliefs about cure or control of TB (99.0%). However, the differences about cause, consequence and cure were significant ($p=.013, .000, .001 < .05$) respectively while that of duration was not significant ($p=.244 > .05$) at .05 level of significance. This implies that beliefs about cause, consequence and cure of TB differs among the urban and rural location while belief about duration of TB did not differ significantly in the two locations.

Discussion

Data in table 1 shows that only 37.8 per cent of respondents had correct beliefs about tuberculosis while the rest, 62.2 per cent had false beliefs about cause of TB. This finding is expected and not surprising. This is because there are wide erroneous beliefs in the community concerning TB. The finding agrees with the assertion of Ibia and Umoh (2013) who stated that in most communities in Nigeria, TB is culturally believed to be a disease caused by witches or comes as a divine punishment to an offender. The finding is also in line with the finding of Abebe et al., (2010) that evil eye was the commonly mentioned causes of TB. This agreement could be attributed to similarity in subjects composition though geographical location and cultural background varied. Furthermore, only 19.1 per cent of respondents had correct belief about duration of TB. This finding is anticipated because of

varied misconceptions about TB prevalent in the society. This finding corroborates that of Khan, Irfan, Zaki and Bej (2006) who reported that 17 per cent of respondents thought that TB occurred only once in a life time and can not recur for a second time after treatment and 19 per cent believed that the total duration of treatment was less than six months.

However, the table reveals that majority of the respondents (75.6%) had correct beliefs about consequences of TB while most (93.5%) had correct beliefs about cure and control of TB.

The finding is expected and not surprising. This is because of the many real consequences of TB in the community. The finding is in line with the report of Oluwadare and Bosede (2010) that the major factor that determine health seeking behavior of TB patients were cost of treatment and privacy due to fear of stigma. Tasnim, Raham and Hogue (2012) also noted that TB patients expressed increased sadness, fear of loss of job or wages and felt socially neglected. This has implication for TB control. The correct belief about cure of TB shown by most respondents (93.5%) is plausible bearing in mind the well articulated activities of the National Tuberculosis and Leprosy Control Programme (NTBLCP). This finding is in line with that of Das, Basu, Dutta and Das (2012) that majority (82.76%) of respondents knew about curability of the disease. This is a plus for NTBLCP. These findings of correct beliefs about cure need to be sustained through regular information and communication on tuberculosis.

Table 2 shows that higher proportion of respondents aged 45-60 years had correct beliefs about cause (52.8%), duration (41.7%) and cure or control of TB (100%). Respondents aged above 60 years had the highest correct belief about consequences of TB. This finding is surprising and unexpected. This is because older people are expected to have better beliefs than younger ones. Higher proportion of patients above 60 years are expected to have correct beliefs about TB in all the belief components studied because of life experiences they might have been exposed to which should influence their beliefs. This finding contradicts the assertion by Aniebue (2008) who described that age influences beliefs about illness because older people tolerate illness more than young ones. The finding equally contradicts the report of Promtusananon and Peltzer (2005) that more misconception on TB existed among teenagers than older people in South Africa. This difference in finding could be attributed to differences in cultural setting of the respondents as it is well known that culture influences beliefs more than any other factor.

However, these differences in the belief components studied were significant at .05 level of significance, cause ($p=.005 < .05$), duration ($p=.002 < .05$), consequences ($p=.000 < .05$), cure or control ($p=.018 < .05$). This implies that beliefs about cause, duration, consequences and cure or control of TB differ according to different age groups. This finding was anticipated because it is expected that older people should have correct and better beliefs than younger ones due to their life exposure. It is expected that age should improve knowledge and sharpen belief. The finding supports that of Ismail and Josephat (2014) who reported that respondents aged between 15 and 44 years were less likely to accept that TB spreads from person to person through air when coughing than those aged 45 years and above.

In table 3, higher proportion of respondents in rural location had correct beliefs about cause (46.5%), duration (23.2%), and consequences (89.9%) of TB while greater percent of respondents in urban location had correct beliefs about cure or control of TB (99.0%). This finding is highly surprising and unexpected. It is expected that people in urban location should have better information and access to health care thereby having higher beliefs than rural respondents. The finding is at variance with the finding of Onyeonoro, Chukwu, Oshi, Nwafor and Meka (2011) who noted that urban residents had better knowledge and belief about TB than rural residents in Enugu State. Ismail and Josephet (2014) also noted that respondents who resided in rural areas were less likely to accept that TB spreads from person to person through air when coughing compared to those from urban areas. The reason for the disparity in finding might be attributed to different designs used in the two studies. However, the differences about cause, consequence and cure were significant ($p=.013, .000, .001 < .05$) respectively while that of duration was not significant ($p=.244 > .05$)at .05 level of significance. This implies that beliefs about cause, consequence and cure of TB differ among the urban and rural location while belief about duration of TB did not differ significantly in the two locations. This finding is expected and therefore not surprising. This is because urban areas are composed of heterogeneous group of people with different beliefs and cultural background unlike rural areas which is mostly homogenous in composition. The finding corroborates the one by Ismail and Josephat (2014) that location influenced knowledge and beliefs about TB in Tanzania with people in urban area being more knowledgeable than their counterparts in rural areas. The reason for the agreement could be as a result of similarity in subject composition.

Implication of the Study for Health Promotion

False and inaccurate beliefs about tuberculosis are sources of great concern for everyone involved in the health industry. False beliefs about cause and duration of TB revealed in this study might have prevented the TB patients from seeking care for TB in health care facilities early enough or make them to default in their TB medication. Defaulting in TB medication can lead to development of multi drug resistant tuberculosis (MDR-TB) which is more difficult to handle. Stigma attached to TB disease might be the reason for the false beliefs revealed in this study. False beliefs and stigma can lead to inappropriate health seeking behaviour or non compliance to medical treatment. Appropriate health seeking behaviour as well as compliance to medical treatment are some of the health promotional activities that individuals including tuberculosis patients are expected to carry out. It therefore implies that health educators, health care workers and other stakeholders in health care should devise means of correcting these false beliefs in order to improve the lives of people infected with TB and the general public. This can be achieved through regular health education in the homes, schools, communities and the media.

Conclusion and Recommendations

From the findings of this study and discussion, it can be concluded that majority of TB patients in the study area had false beliefs about cause and duration of tuberculosis while most had correct beliefs about consequences and cure or control of TB. There were significant differences in the beliefs about TB based on the variables of age and location. Based on the foregoing, the following recommendations are made;

1. Public health educators as well as other health workers should use all available settings to disseminate health information especially on tuberculosis in other to enhance beliefs about TB and subsequently lead to control of the disease.
2. The ministry of health, in collaboration with ministries of education and information should carry out serious health education campaign including school, community and media health education to correct the false beliefs associated with TB in order to increase TB control efforts.

Limitations of the Study

This study used only TB patients who are already on treatment. They might have been exposed to certain information during the course of their treatment that might affect their beliefs. Therefore the findings cannot be generalized to the entire population. A study focusing on community members will provide a more comprehensive view of what beliefs about TB in the general community is like. Furthermore, the use of questionnaire limits the finding of this study. Qualitative methods like interview and focused group discussion could have revealed more detailed beliefs about TB and factors that influence these beliefs. However, the findings of this study is an eye opener to what the beliefs of people in this community is like which will guide the development of any strategy or measures to correct false beliefs about TB inherent in the community.

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