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AWARENESS ON PULMONARY TUBERCULOSIS AMONG THE FISHERMAN

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Abstract: ***Background:*** *TB is one of the world's leading causes of death and of the global burden of disease.* ***Objectives****: To assess the awareness on pulmonary tuberculosis among the fisherman.* ***Methodology:*** *A cross sectional study was done among 100 fishermen purposively by face to face interview using pretested semi structured questionnaire in coastal area of Patuakkali District, Bangladesh.* ***Result:*** *The mean age of the respondents was 38.7 ± 11.3 years and 36% were within the age group of 30-39 years. About 85% of them were Hindus remaining were Muslims and 92% were married. Seventy percent of the respondents were illiterate, 72% of the respondents had monthly family income of BDT 5000-10000 and 64% had nuclear family. All of the respondents had knowledge on TB previously and 16% of their relative were affected by the disease of them 56.3% was their family member. 68% of the respondents knew that micro-organism is the cause of TB and 58% knew contact with TB patient cannot transmit TB. About 69% of the respondents knew cough is a symptom of TB and 76% believed that proper treatment of TB patients is required for prevention of TB. Moreover 93% knew that TB could be cured by drugs and 72% knew DOTS programme out of which 50% had information from media. About 46% of the respondents attended hospitals first after become*

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sick and 6% felt shaky to express if they were diagnosed as TB patient. Social stigma was the main reason behind it (50%). Respondents (76%) satisfied with services provided from health centers. Respondents getting information regarding TB from media was 54% and 74% were taking services for this ailment from government institutions. Significant relationship were found with age category with feeling shaky (p=0.03), level of education with site of consultation first after becoming sick (p=0.00) and satisfaction with services from health center (p=0.00) and also significant relationship between monthly income and place of consultation first after becoming sick. ***Conclusion****: The overall knowledge on transmission and prevention of TB is not satisfactory. Continuous training of health care providers to upgrade their scientific knowledge regarding behavior change communication, health education, importance of early detection of TB patients and counseling.*

Key words: micro-organism, DOTS program, transmission and prevention of TB

INTRODUCTION

Tuberculosis has reached epidemic proportions in many developing countries, with a third of world population being infected. Every year there are about 8 million new TB cases that results in 2-3 million deaths worldwide, making TB one of the leading killers amongst all infectious diseases. Tuberculosis is an infectious bacterial disease caused by mycobacterium Tuberculosis. Robert Koch found out TB in 1882. TB affects mainly lungs called as pulmonary tuberculosis. 80% of TB cases are pulmonary TB. It also affects the organs except lungs called extra pulmonary TB. The organs other than lungs are bones, intestine, genito-urinary tract, skin, brain and glands.[1] It has the greatest impact on youth and adults the most economically productive population and has become the most common cause of death. In some cases people are not aware that they have become infected and in some people, the bacteria remain dormant and can become active again if their immune system becomes wreaked or if they become malnourished.[2] Therefore the social and economic burden of TB is great and it affects directly the future of people and nation. World Health organization (WHO) declared TB as a global emergency in 1993 and it advocated one of the most effective strategies available for TB control WHO recommended Directly Observed Treatment Short Course (DOTS) as a new method of treating TB.[3] The Millennium Development target for TB is to have halted and begun to reverse its incidence by 2015.[4] Globally, TB rates continue to rise. TB is one of the world's leading causes of death and of the global burden of disease. It is a major killer of women, rivaling maternal mortality. It is a prime cause of death in

people with HIV. Children are particularly vulnerable to TB infection as they are often held close and breathed on. One-third of the world's population is latently infected with the bacillus that causes TB (*Mycobacterium tuberculosis*), though most will show no symptoms. Although only a small proportion of these people will develop active TB, the sheer scale of the full disease is startling.[5] TB afflicts the poor above all. Ninety-five percent of all TB sufferers live in developing countries. Most are poor people ages 15–54, who should be in their prime productive and reproductive years. Too often TB traps patients and their families in a cycle of disease and impoverishment. And the stigma of TB disrupts the social fabric of society.[6] Poverty, HIV, and deadly multidrug-resistant tuberculosis (MDR-TB) strains are key drivers of the TB epidemic. Their impact is evident in the huge variations in TB incidence around the world.[7] To provide a measurable target, the Working Group on TB of the UN Millennium Project Task Force on HIV/AIDS, Malaria, TB, and Access to Essential Medicines recommends that the global TB control target should be to halve the prevalence of TB disease and deaths between 1990 and 2015.[4] These targets are demanding but achievable. Action taken to meet the target for TB will both contribute to and benefit from action taken to meet the other Millennium Development Goals targets, particularly those targeting poverty, gender issues, HIV/AIDS, and access to essential medicines.[8] Effective TB control depends on the rapid identification and cure of infectious cases. Since 1995, over 13 million TB patients have been treated under DOTS. Out of 210 countries, 180 are implementing the strategy. Recent statistics from China—one of the countries most affected by the TB epidemic—suggests that DOTS implementation led to a 30 percent reduction of TB prevalence and improved treatment rates in just seven years.

The World Health Assembly has set process targets for 2005 of detecting 70 percent of new infectious cases of TB and successfully treating 85 percent of those detected.[6] Achieving these twin targets under DOTS should be sufficient to halt the incidence of TB in all countries (including those with high rates of multi drug resistance), except countries with high rates of HIV infection.[9] In 2002 only 37 percent of the estimated number of smear-positive TB cases was captured by DOTS programs—little more than halfway to next year's World Health Assembly target of 70 percent. Recent signs of acceleration must be the foundation for an immediate massive effort to ensure that DOTS services are expanded quickly and effectively. [10] The urgent expansion of the DOTS strategy requires the coordinated efforts of all TB healthcare providers in a country, whether public, private, or voluntary.[11] Normally the

progression from latent infection to clinical disease is a slow process, but for HIV co-infected patients it can be rapid and fatal.[7] Because of their suppressed immune system, people with HIV and latent TB have a 5–15 percent annual risk of developing an active TB infection versus a 10 percent lifetime risk for those with latent TB alone. An HIV epidemic can lead to dramatic increases in the number of people who contract TB, even in countries that have traditionally had a low TB incidence.[12] It is the most re-emerging disease and this study will help to identify the factors related to TB among fisherman. This small scale study that may help to identify the pulmonary tuberculosis related factors and open a window for larger research which can help to design pulmonary tuberculosis among the lower socio-economic group of Bangladesh.

METHODOLOGY

A descriptive cross-sectional study was carried out to assess the awareness on pulmonary tuberculosis among 100 fisherman purposively selected of costal area of Patuakhali district from 1st May to 31st August 2012. Data was collected by using a pre-tested modified semi structured interviewer administered questionnaire. Statistical package for social science (SPSS) version 16.0 a computer programmed was used to analyze the collected data.

RESULTS

Table No. 1 shows that mean age of the respondents was 38.7 = 11.13 years. Among the respondents the highest frequency were in 30-39 years of age group 36.0% (36) ,followed by 40-49 years of age group 28% (28) , <30 years and 50-59 age group comprised 15% (15) and >60 years age group 6% (6) . Regarding religion among the most were Hindu 85% (85) by religion and rest 15% (15) were Muslim. Regarding marital status among 100 respondents most of them 92% were married and rest portion were 8% (8) single. On the basis of level of education among the respondents most of them were illiterate 70% (70) by education followed by primary school were 22.0% (22) and rest 8% (8) were at the level of secondary school. Regarding monthly income among 100 respondents most of them 72% (72) were in category of BDT 5000-10000, 22% (22) were in category of BDT >10000 and rest 6% (6) were in BDT <5000 category.

Regarding family type most of the respondents were in nuclear family 64% (64) at rest 36% (36) were in joint family.

Table No. 02 shows that among 100 respondents 100 % respondents were know about TB previously. It shows that among 100 respondents most of them 84% (84) had negative answer regarding any relative affected by TB whereas only 16% (16) has got positive history. Among positive history of relative affected by TB, most of them 56.3% (9) were family member, followed by 31.3% (5) were relatives and rest 12.5% (2) was self. It shows that among 100 respondents, by opinion regarding cause of TB most of them 68% answer were micro organism, followed by bad weather 40% , curse of God 24% and heredity 8% (8). It shows that among 100 respondents, regarding how TB is transmitted most of their opinion were contact with TB patient 58% and living in unhealthy environment 45% ,followed by from coughing and sneezing of the patient 25% and rest from bad air 16%. It shows that among 100 respondents most portion opinion about symptoms of TB were cough 69%, followed by haemoptysis 48%, fever 40% and weight loss 22%. It shows that among 100 respondents ,regarding how TB can be prevented ,their opinion were ,proper treatment of TB patient 76.0% , followed by creating awareness on preventive practice and health education 39% ,disposing sputum and cough of TB patient 17% , segregation of families having TB 10% (10) and isolating TB patient from society 6%. It shows that among 100 respondents most of their opinion regarding TB cured by drugs here positive 93% (93), followed by doesn't know 6% (6) and negative 1% (1). It shows that among 100 respondents ,most of them 72% (72) were known about DOTS programme where as rest 28% (28) did not know .Among those who know about DOTS programme most of them 50% (36) were from media , followed by health workers 38.9% (28) , family members 5.6% (4) and friends 5.6% (4).

Figure 1 shows that among 100 respondent, most of them 46% were attended to hospital after becoming sick followed by traditional healer 22.0% Quack 21% and rest 11% were attended to private practitioner.

Table No. 3 shows that among 100 respondents most of them 94% (94) were not feeing shaky to express if diagnosed as Among TB case but rest 6% (6) were feeling shaky to express. Among those who feel shaky to express if diagnosed as a TB case the reason behind were social stigma 50% (3), isolation from society and family 16.7% (1) , Abandoned from partner 16.7% (1) and no specific reason 16.7% (1).It shows that among 100 respondents most of them 76% (76) were satisfied with services provided from health center where as rest 24% (24) were not.

Figure 2 shows that among 100 respondents most of them 52% get information's related to TB from TV , followed by health workers 20% , family members 14% , friends 9% , Billboard 3% and Radio 2% .

Figure 3 shows that among 100 respondents most of them 74% get services related to TB were getting from government institutions and rest 26% from NGO.

Table No.4 Shows that there is association between age category with feeling shaky to express if diagnosed as TB case (P value = 0.03), is statistically significant .It shows that there is association between level of education with site of consultation first after becoming sick, (P value = 0.00), is statistically significant. It shows that there is association between monthly income with site of consultation first after becoming sick, (P value = 0.01), is statistically significant. It shows that there is association between level of education with satisfaction with services provided from health center, (P value = 0.00) is statistically significant. It shows that there is association between monthly income with satisfaction with services provided from health center (P Value = 0.04), is statistically significant.

DISCUSSION

This descriptive cross-sectional study was conducted to assess the knowledge on pulmonary tuberculosis among the fisherman of costal area of Patuakhali district, Bangladesh. The study aimed to see whether there is relation between variables and there were some of the variables have statistically significant relations. The study sample was 100, which was selected purposively.

The mean age of the study respondents was 38.7 years with standard deviation of ± 11.3 years which is similar with study conducted in India where the figure were 35.6 ± 12.4 years. [14] It was revealed in study conducted in Philippine and found that the mean age was 36 ± 8.4 years , and in Ethiopia it was 36.9 years , but differ with study in Nigeria where it was 29.5 ± 11.0 years.[15,16,17] In the current study most of the respondents (36.9%) belonged to 30-39 years age group which is similar with study in Ethiopia where the prevalence among 30-44 years age group was 51%.[16] But differ with study in India where majority (38.4%) to 14-24 years age group, and in Pakistan where 60% of were belonged to age group 20-39 years, and in Sudan 60.8% were within 20-39 years age group.[14,18,19] In the present study 85% of the respondents were Hindu which differs largely with study in India where 71.7% respondents were Muslim[14], and study

in Ethiopia where 100% respondents were Muslim.[16] Regarding marital status 92.0% were married in this study which is similar with study in Ethiopia where 94.0% respondents were marrieed.[16]

In the current study 70% of the respondents were illiterate, 22% get primary education and rest (8%) get secondary education which is similar with study in Ethiopia where 92.1% were illiterate[16] and 43.42% in Sudan.[19] But in India the figures were 30.8% illiterate, 31.7% primary education and 25.0% get secondary education[14], and in Pakistan it was 16% illiterate and 52% of them were secondary education or above.[18]

It is found the current study that the monthly income of 72% of the respondents were BDT 5000-10000, 22% BDT >10000 which differs in the study conducted in Pakistan where 44% of the respondents had monthly income of Rs <5000 and 34% had Rs 10000 [18], and in Philippine 67.7% were had Php <5000.[15] In the present study, 64% of the respondents had nuclear family. Remaining 36 % of them had joint family. The result is supported by a study conducted in Bangladesh in 2007.[20]

In this study 100% of the respondents were known about TB previously which nearly similar in study conducted in Philippine where 96.8% had knowledge on TB .[15] In the current study, 16% of the respondent's relative affected with TB, among them 56.3% were family member and 31.3% were relative which is nearly similar with a study conducted in Philippine where the figure was 67.7% family member and 14.6% were relative.[15]

The present study revealed that 68% of the respondents know the disease is due to a micro-organism, 40% opined bad weather in the reason , 24% believed it is a curse of God and 8% thinks it is a hereditary disease, which differs a study conducted in India where the figure were 45% inadequate food intake, 25.8% smoking, 16.7% micro-organism and 10.0% God's curse.[14] 58% respondents answered that contact with TB patient is the mode of transmission of TB and 45% opined that living in unhealthy environment is the reason and 25% from coughing and sneezing of a patient and 16% thought bad air is the mode of transmission which differs a study conducted in Pakistan where 42% opined coughing and sneezing , 42% eating with a TB patient , 34% drinking dirty water , 24% spitting sputum , 22% breathing air and 14% touching each other.[18] In another study conducted in Philippine where 85% thought respiratory route is the route of transmission, 61.3% use of patients personal objects and 11.3% of the respondents were believed physical contact with patients is the reason.[15]

In the current study regarding symptoms of TB 69.0% of the respondents had cough, 48.0% haemoptysis, 40.0% fever and 22.0% weight loss which is similar to study conducted in Pakistan where 76% of the respondents had cough lasting more than 3 weeks, 68% had fever, 38% had haemoptysis and 14% had weight loss. [18] In another study conducted in Philippine where the figure were 62.9% had cough, 74.2% had fever, 35.5% had haemoptysis and 21.1% had poor weight gain.[15]

The current study revealed that 76% of the respondents knows proper treatment of TB patient is the proper way to prevent TB while 39% thinks creating awareness on preventing practices and health education, 17% thinks disposing sputum and cough of TB patient, 6% isolating TB patients from society and 10% segregation of families having TB patients are the methods of prevention of TB which is nearly similar with a study conducted in Pakistan where the figure was 36% by using medicine, 20% for better sanitation.[18] The findings are different from study conducted in India which revealed 78.3% thought use of separate utensils, 50.8% self isolation, 46.7% covering face while coughing and 20% safe sputum disposal are the ways to prevent TB.[14]

In the present study, 93% of the respondents said that TB is cured by drug which is supported by a study in Pakistan where the figure was 100% [18] and in Philippine it was 96.8%.[15] In the present study 72% of the respondents know DOTS programme and their sources of information is from friends (5.6%), from family members (5.6%), from health workers (38.9%) and from media (50%). In the current study 46% of the respondents attend hospital first after becoming sick, 22% traditional healer, 21% quack and 11% private practitioner which differs from the study conducted in Philippine where the figure was 56.5% hospital, 45.2% local health center, 27.4% family doctor and 1.6% traditional faith healer.[15] 6% of the respondents in this study feel shaky to express that they had TB which is similar a study conducted in Philippine where 8.1% of the respondents do so.[15]

In the current study, 76% of the respondents were satisfied with the services provided from the health centers. Regarding source of information related to TB, 54% get from media (Radio, TV), 20% from health workers, 14% from family members, 9% from friend and 3% from billboard which is nearly similar to a study conducted in Philippine where the figure was 41.9% from media, 27.4% from hospital and 22.6% from friends.[15] 74% of the respondents of the current study getting services related to TB from Government institutions and 26% from NGO.

There is statistically significant relationship between age in category with feeling shaky if diagnosed as TB case (p=0.03), between level of education with site of consultation first after becoming sick (p=0.00) and satisfaction with services provided from health center (p=0.00). There is also relationship between monthly income with site consultation first after becoming sick (p=0.01) which is also statically significant.

CONCLUSION

The present study revealed that majority portion of the respondents was in middle aged that is the most productive populations. Here the respondents were fisherman, they are mostly illiterate and low socio-economic category of income, that's why a major portion initially treated by quack or traditional healer. Media that is Radio and TV has played an important source of information regarding TB and DOTS programme among the respondents. Though lack of consciousness and education but they get their services for TB mostly from government institutions. Raising awareness helps ensure that people know the symptoms of the disease and the steps they can take to reduce their risk of contracting it, increased awareness could also establish drug resistant TB as an important priority for public spending on biomedical research. Other departments should work together Government and NGO along with national and international collaboration to educate the general population and to help increase public awareness. Continuous training of health care providers to upgrade their scientific knowledge regarding behavior change communication, health education, importance of early detection of TB patients and counseling. Public awareness raising programme should be arranged using electronic and print media. This programme should particularly address the myths and various misconceptions regarding transmission of TB and its cure. Further research is needed to improve knowledge to identify the barriers and to determine the reasons for delay in diagnosis.

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SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

The following variables described the socio-demographic characteristics of the study population. They are as follows: Age, Religion, Education, Family type, Marital status Income etc.

Table No. 1: Distribution of respondents by socio-demographic characteristics (n=100)

Characteristics	Frequency	Percent
Age		
<30	15	15.0
30-39	36	36.0
40-49	28	28.0
50-59	15	15.0

>60	6	6.0
Religion		
Islam	15	15.0
Hindu	85	85.0
Marital status		
Single	8	8.0
Married	92	92.0
Level of Education		
Illiterate	70	70.0
Primary school	22	22.0
Secondary school	8	8.0
Monthly Income		
<5000	6	6.0
5000-10000	72	72.0
>10000	22	22.0
Family type		
Nuclear	64	64.0
Joint	36	36.0

Table No. 2: Distribution of respondents regarding knowledge about TB (n=100)

Variables	Frequency	Percent
Know about TB		
Yes	100	100.0
No	0	0.0
Relative affected by TB		
Yes	16	16.0
No	84	84.0
Relation		
Self	2	12.5
Family members	9	56.3
Relative	5	31.3
Cause of TB		
Micro organism	68	68.0
Bad weather	40	40.0
Heredity	8	8.0
Curse of God	24	24.0
Transmission of TB		
Contact with TB patient	58	58.0

Living in unhealthy environment	45	45.0
From coughing and sneezing of the patient	25	25.0
From bad air	16	16.0
Symptoms of TB		
Cough	69	69.0
Fever	40	40.0
Weight loss	22	22.0
Haemoptysis	48	48.0
Prevention of TB		
Proper treatment of TB patient	76	76.0
Creating awareness on preventive practices and health education	39	39.0
Disposing sputum and cough of TB patient	17	17.0
Isolating TB patient from society	6	6.0
Segregation of families having TB patient	10	10.0
TB cured by drugs		
Yes	93	93.0
No	1	1.0
Doesn't know	6	6.0
DOTS programme		
Yes	72	72.0
No	28	28.0
From whom		
Friends	4	5.6
Family members	4	5.6
Health workers	28	38.9
Media	36	50.0
Total	**72**	**100.0**

Table 3: Health seeking behavior related characteristics (n=100)

Variables	**Frequency**	**Percent**
Feel shaky		
Yes	6	6.0
No	94	94.0
Reasons		
Isolation from society and family	1	16.7
Abandoned from partner	1	16.7

Social stigma	3	50.0
No specific reason	1	16.7
Satisfaction about services from health center		
Yes	76	76.0
No	24	24.0
Total	**100**	**100.0**

Table No. 4: Distribution of respondents by association between different variables

Variables		**Felling shaky to express**		**Total**	**P-Value**
		Yes	No		
Age	<30	0	15	15	0.03
		0%	100%		
	30-39	1	35	36	
		2.8%	97.2%		
	40-49	0	28	28	
		0%	100%		
	50-59	4	11	15	
		26.7%	73.3%		
	>60	1	5	6	
		16.7%	83.3%		

Variables		**Site of consultation first**				**Total**	**P-Value**
		Quack	Traditional healer	Private practitioner	Hospital		
Level of education	Illiterate	15	11	7	37	70	0.00
		21.4%	15.7%	10.0%	52.9%		
	Primary	6	10	1	5	22	
		27.3%	45.5%	4.5%	22.7%		
	Secondary	0	1	3	4	8	
		0%	12.5%	37.5%	50.0%		

Variables		**Site of consultation first**				**Total**	**P-Value**
		Quack	Traditional healer	Private practitioner	Hospital		
Monthly income	<5000	4	0	0	2	6	0.01
		66.7%	0%	0%	33.3%		
	5000-10000	14	18	5	35	72	
		19.4%	25.0%	6.9%	48.6%		
	>10000	3	4	6	9	22	
		13.6%	18.2%	27.3%	40.9%		

Variables		**Satisfaction of services**		**Total**	**P-Value**
		Yes	No		
Level of education	Illiterate	55	15	70	0.00
		78.6%	21.4%		
	Primary	13	9	22	
		59.1%	40.9%		
	Secondary	8	0	8	
		100%	0%		
Variables		**Satisfaction of services**		**Total**	**P-Value**
		Yes	No		
Monthly Income	<5000	2	4	6	0.04
		33.3%	66.7%		
	5000-10000	57	15	72	
		79.2%	20.8%		
	>10000	17	5	22	
		77.3%	22.7%		

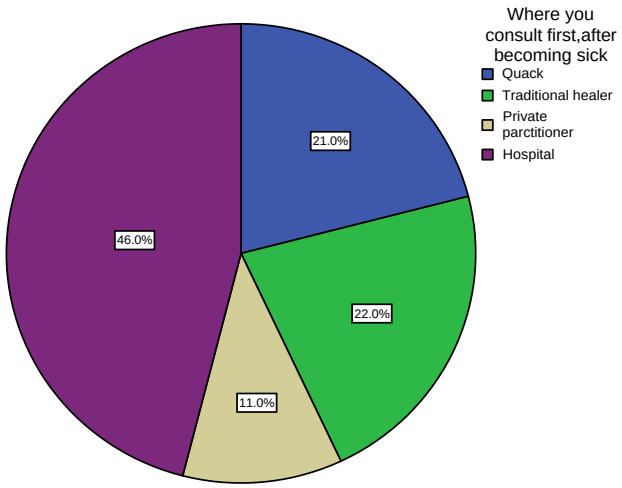

Figure 1: Distribution of respondents by site of consult first after sick

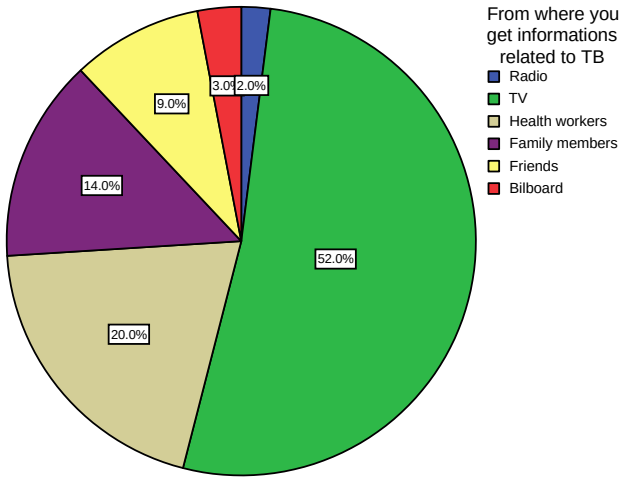

Figure 2: Distribution of respondents by site of getting information about TB

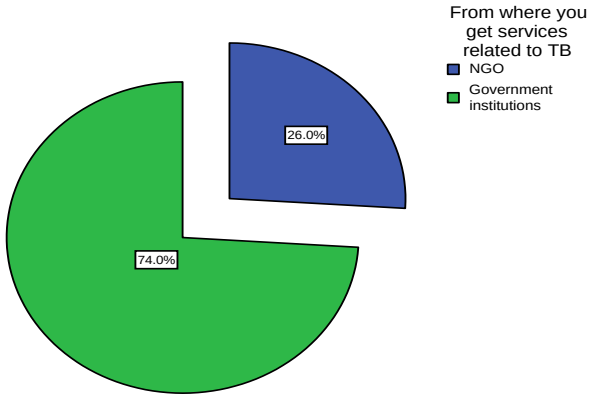

Figure 3: Distribution of respondents by site of getting service related to TB