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# Awareness on pulmonary tuberculosis among adult population in selected area of Rajshahi city, Bangladesh

**[1] Md. Nuruzzaman, [2] Mohammad Abu Bin Nyeem, [3] Md. Khairul Alam, [4] Md. Monir Ahammed, [5] Md. Abdul Mannan, [6] BM Rabiul Islam**

[1, 6] Department of Public Health, ASA University, Bangladesh
[2, 3, 5] Department of Unani Medicime, Hamdard University, Bangladesh
[4] Department of Ayurvedic Medicime, Hamdard University, Bangladesh

**Abstract**
The objective of this study was to assess the level of awareness concerning tuberculosis among the Bastuhara para of Rajshahi. A cross-sectional study was done. The mean age and income of the respondents were (40.42±13.985) years and income (9709.40±8537.251 tk.). 50.4% female, 49.6% male. 94.6% Muslim, 85.5% married, 59% illiterate. 41.88% smoker, 52% were smoking about 11-20 years, 34.2% were housewife, 71. 8% lived in semi-building, 99. 1% source of drinking water is tube well. About 99.1% heard about tuberculosis, 69.8% heard about tuberculosis from television/radio, 51.3% knew the cause of tuberculosis. About 63.3% told the cause of tuberculosis is smoking, 77.8% knew the effected group of tuberculosis, 50. 55% told that tuberculosis occurs in old age, 74.4% knew the gender group of TB. About 93.3% told that TB occurs mainly in male. 52.1% didn't know it is contagious diseases, 52.7% told only those who are closed to TB patients can be effected. About 52.1% of the respondents knew the sign and symptoms of TB, 59.0% told the sing and symptoms of TB is bleeding through cough, 69.2% of the respondents didn't know the prevention policy of TB, 70.59% told the treatment of TB is medication, 69.2% knew the vaccination policy of TB. 51.5% told the period of vaccination is just after birth, 78.6% didn't know the causes of TB, 52.2% told the cause of TB is live together with TB patient, 71.8% didn't know the way to free from TB, 94% knew the treatment of TB is total free of cost, 52.73% told that the treatment Centre of TB is only TB hospital, 63.2% knew the treatment policy of infected person, 56.2% told the patient should keep separately after infected TB, 52.1% feel compassion but like to stay away from TB patient 39.3% of them try to avoid TB patients from community. There is a wide knowledge gap among the public regarding PTB. The idea of organizing directly observed TB treatment using volunteers appears to be accepted.

**Keywords:** pulmonary tuberculosis, adult population & awareness survey

## Introduction

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis and can spread from one person to another through air. Periodic knowledge and attitude studies serve as an educational diagnosis of a population or community and are an important way to measure changing beliefs and behaviors over time. It tells us what people know about certain things, how they feel, and how they behave. This information helps programs set communication objectives linked to increased community engagement and demand for services and develop tailored strategies appropriate for the social, cultural, and political contexts of at-risk communities. Under Revised National Tuberculosis Control Programme, through a consistent communication, a lot of awareness has been created about TB - about its cause, symptoms, cure, as well as various misconceptions and stigmas attached to it. Awareness among general population, especially vulnerable population like urban slums, regarding TB is important and it leads to timely treatment seeking. Knowledge about the common symptoms of TB and availability of free diagnosis and treatment facility for TB will help in improving the treatment seeking behavior despite the introduction of Directly Observed Treatment Short-course (DOTS) strategy, tuberculosis is still a leading cause of death in the developing world particularly in sub-Saharan Africa [1].

TB mortality has fallen 47% since1990, with nearly all of that improvement taking place since 2000, when the MDGs were set. The MDG target to halt and reverse TB incidence has been achieved on a worldwide basis, in each of the six WHO regions and in 16 of the 22 high-burden countries that collectively account for 80% of TB cases. Globally, TB incidence has fallen by an average of 1.5% per year since 2000 and is now 18% lower than the level of 2000.In 2014, TB killed 1.5 million people (1.1 million HIV-negative and 0.4 million HIV-positive). The toll comprised 890 000 men, 480 000 women and 140 000 children. TB now ranks alongside HIV as a leading cause of death worldwide. HIV's death toll in 2014 was estimated at 1.2 million, which included the 0.4 million TB deaths among HIV positive people. Hence, feasible alternative strategies for directly observed treatment of TB at community level need to be identified. The identification volunteer-treatment supervisors who are accepted by their respective community could be crucial to set up sustainable and effective community based DOT of TB in Africa. The need for population based studies in order to design appropriate tuberculosis education, should not therefore be understated if

the global targets for case detection and treatment outcome are to be achieved [2].

Many known factors make people susceptible to TB infection. Human Immunodeficiency Virus (HIV) infection is one of the main factors as many of TB patient are HIV positive [3]. Diabetes is an important factor as well [4]. A study done by Davies *et al.* revealed that smoking more than 20 cigarettes per day increases the susceptibility to get infected by four folds [5]. Other illnesses that have been attributed to TB infection are chronic lung disease, endstage renal disease, Hodgkin lymphoma, and malnutrition and alcohol consumption [6]. Tuberculosis is considered as a social disease, which explains the importance of the social factors in TB transmission. Social factors involve illiteracy, low socioeconomic status, poverty, poor housing, and overcrowding and large size families [7]. In addition, more knowledge and awareness may improve the control measures that will lead to the decrease of the transmission of the disease [8]. Although public education and awareness is essential for the prevention and lowering the spread of tuberculosis, many studies revealed that there are limited information and many misconceptions about this infectious disease [9, 10].

## Materials and method

A descriptive cross-sectional study was done. Study site was Rajshahi Bastuharapara area of Rajshahi from 1st May, 2016 to 31st October, 2016 was the study period of this study. Study population was 117 people of Rajshahi. During data collection semi structured questionnaire was applied to collect statistically useful data by face to face interview to know the socio-demographic status, knowledge and education status of individual with verbal and written consent to get the result of research. To manage and analyze the data, SPSS-Version 16 and Microsoft Access Program 2007 was used.

## Results

A total number of 117 respondents were interviewed. Mean age of the respondents were (40.42±13.985) years. The majority respondents (50.4%) were female while 49.6% were male.94.6% of respondents was found Muslim in the contest only 5.1% respondents was found Hindu. Among the respondents, majority 85.5% were married while 9.4% were unmarried in the contrast only 5.1% were found divorced. Regarding educational status, majority 59% of them are illiterate in contrast 5.1% respondents completed class eight certificate course. About 15.4% of them completed primary level and 14.5% of them completed secondary school certificate while only 6% respondents had complete a higher secondary school. More than two third of the respondent's income were per month (2000-10000 tk.) in the contrast only.9% income were more than 20000 tk. About 32.5% of the respondents' incomes were 11000-20000 tk. the mean income of the respondents were 9709.40±8537.251 tk.

**Table 1:** Distribution of the respondents according to age, sex, religion, marital status, education and income, Number (n=117)

| | | Number | Percentage (%) |
|---|---|---|---|
| **Age (years)** | 18-35 | 51 | 43.6 |
| | 36-55 | 46 | 39.3 |
| | 56-68 | 20 | 17.1 |
| **40.42 ±13.985 years** | | | |
| **Sex** | Male | 58 | 49.6 |
| | Female | 59 | 50.4 |
| **Religion** | Muslim | 111 | 94.6 |
| | Hindu | 6 | 5.1 |
| **Marital status** | Unmarried | 11 | 9.4 |
| | Married | 110 | 85.5 |
| | Widowed/Divorced | 6 | 5.1 |
| **Education** | Illiterate | 69 | 59 |
| | Primary | 18 | 15.4 |
| | Secondary | 17 | 14.5 |
| | Higher secondary | 7 | 6 |
| | Class eight | 6 | 5.1 |
| **Income (Tk.)** | 2000-9000 | 59 | 50.43 |
| | 10000-17000 | 55 | 47 |
| | 18000-25000 | 3 | 2.6 |
| **(9709.40±8537.251 tk.)** | | | |

Among the respondents 41.88% are smoker while 58.1% are nonsmoker**.** Most of the respondents (52%) are smoking for about 11-20 years while 14% of them are smoking for about 31-40 years. About 18% of them are smoking for 1-10 years and 14% of them are smoking for 21-30 years.

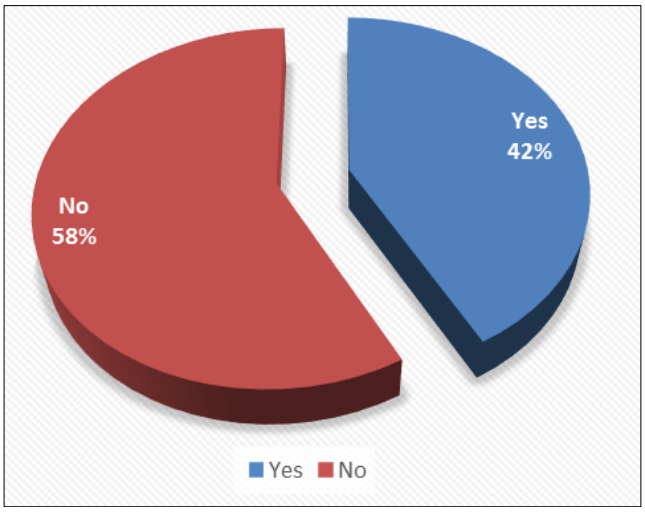


**Fig 1**: Distribution of the respondents according to Smoking status

Most of the respondents (34.2%) were housewife in contest of that 2.6% of them are in private job. 14.5% of them told they were day labor and the same percentage told they were business man while 4.3% of them were unemployed. About 9.4% of them were rickshaw puller and 6% of them were

vehicle driver. About 8.5% were farmer in the contrast 6.0% were students. All the respondents had 1-3 rooms in their family. 70.1% of the respondents had 1-5 person in their family in contest of that 29.9% of the respondents had 6-10 members in their family. Most of the respondents lived in semi-building in contrast of that 12.8% of them were living in muddy house. About 15.8% of the respondents lived in building. Among the respondents 68.4% had semi-building wash rooms and toilets while 3.4% had semi-building wash rooms and toilets. 28.2% had semi-building wash room sand toilets. About 99.1% of the respondents source of drinking water is tube well in the contest of that.9% of the respondents dependents their drinking water from supply.

**Table 2**: Distribution of the respondents according to family member, condition of living room, condition of wash rooms and source of drinking water: Number (n=117)

| | | Number | Percentage (%) |
|---|---|---|---|
| **Family member** | 1-5 persons | 82 | 70.1 |
| | 6-10 persons | 35 | 29.9 |
| | | | **4.85 ±1.476 persons** |
| **Condition of living rooms** | Muddy | 15 | 12.8 |
| | Semi-building | 84 | 71.4 |
| | Building | 18 | 15.8 |
| **Condition of wash rooms** | Muddy | 4 | 3.4 |
| | Semi-building | 80 | 68.4 |
| | Building | 33 | 28.2 |
| **Source of drinking water** | Supply water | 1 | .9 |
| | Tube well | 116 | 99.1 |

Regarding the study, a total number of 12 questions were selected for awareness. Among them those who gave 7-12 answer correctly were selected as very good awareness while those who gave 4-6 answer correctly were selected as good awareness. And those who gave 1-3 answer correctly were selected as poor awareness. By this awareness level 56.4% were very good awareness about TB in the contest 14.5% were poor awareness. Among them 29.1% was good awareness.

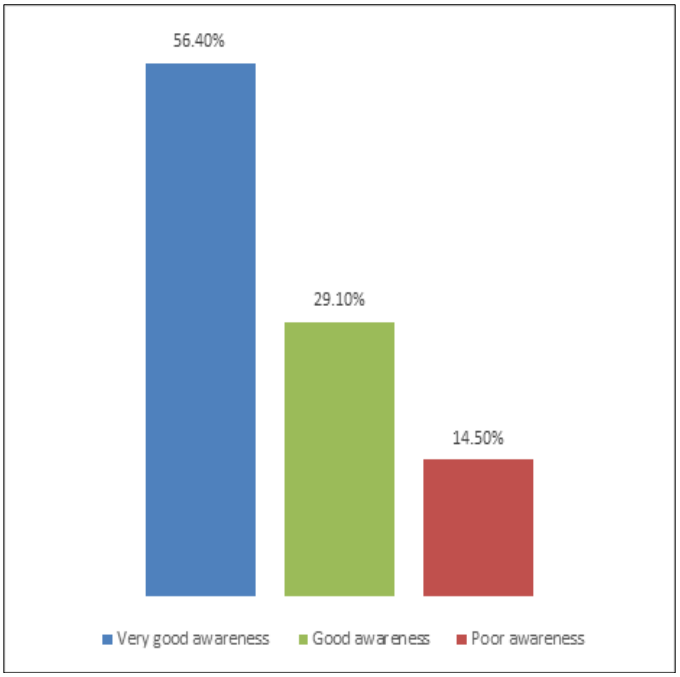


**Fig 2**: Distribution of the respondents according to level of awareness on TB

Most of the respondents (69.8%) heard about tuberculosis from television/radio in contest of that 7.8% of them heard about tuberculosis from their relatives and 22.4% of them heard about tuberculosis from their neighborhood.

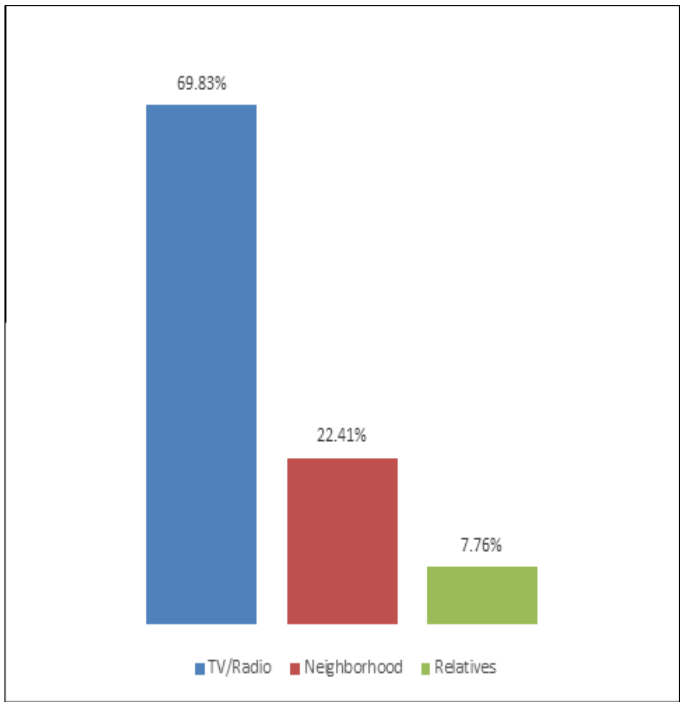


**Fig 3:** Distribution of the respondents according to source of awareness about tuberculosis

About two third of the respondents (63.3%) told the cause of tuberculosis is smoking which 1.7% of the respondents told the cause of tuberculosis was malnutrition. About 23.3% of the respondents told the cause of tuberculosis is germ while 3.3% of them told the cause of tuberculosis was due to living in dampest room. About 8.3% of the respondents told the cause of tuberculosis was sneezing and coughing from men to men. Among the respondents more than fifty percentage (50.55%) of the respondents told that tuberculosis occurs in old age in the contrast 5.49% of the respondents thought TB occurs in young age.

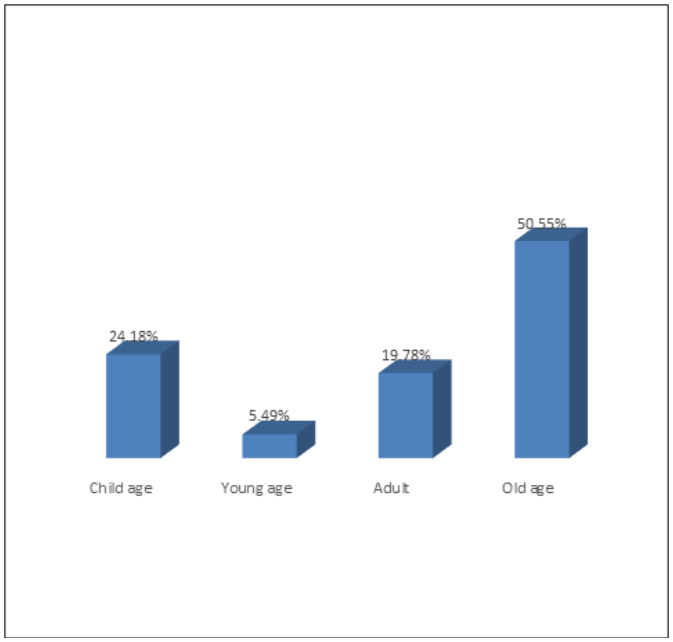


**Fig 4:** Distribution of the respondents according to awareness about vulnerable group of tuberculosis

19.78% told that tuberculosis occurs in adult age while 24.18% told that tuberculosis occurs in child age. About three fourth of the respondents (74.4%) knew the gender group of TB occurs in contest of that 25.6% of them didn't know the gender group of TB occurs. About 93.3% of the respondents told that TB occurs mainly in male in contrast 6.7% of them told TB occurs mainly in female. About 52.7% of the respondent told only those who are closed to TB patients they will be effected in the contrast only 5.5% of them told those who are living in unhealthy environment. 34.5% of the respondents told anybody can be a effected by TB while 7.3% of them told only the poor could be affected. Most of the respondents (59.0%) told the signs and symptoms of TB were bleeding through cough in the contrast 1.6% of them told fever about more than 7 days without any cause. About 29.5% of the respondents told the sing and symptoms of TB were cough more than three weeks while 9.8% of them told the sing and symptoms of TB were weight loss.

Most of the respondents (70.59%) told the prevention policy of TB is medication while 11.76% of them told the prevention policy of TB were to keep patient separately from others. 17.65% of the respondents told the prevention policy of TB were vaccination.

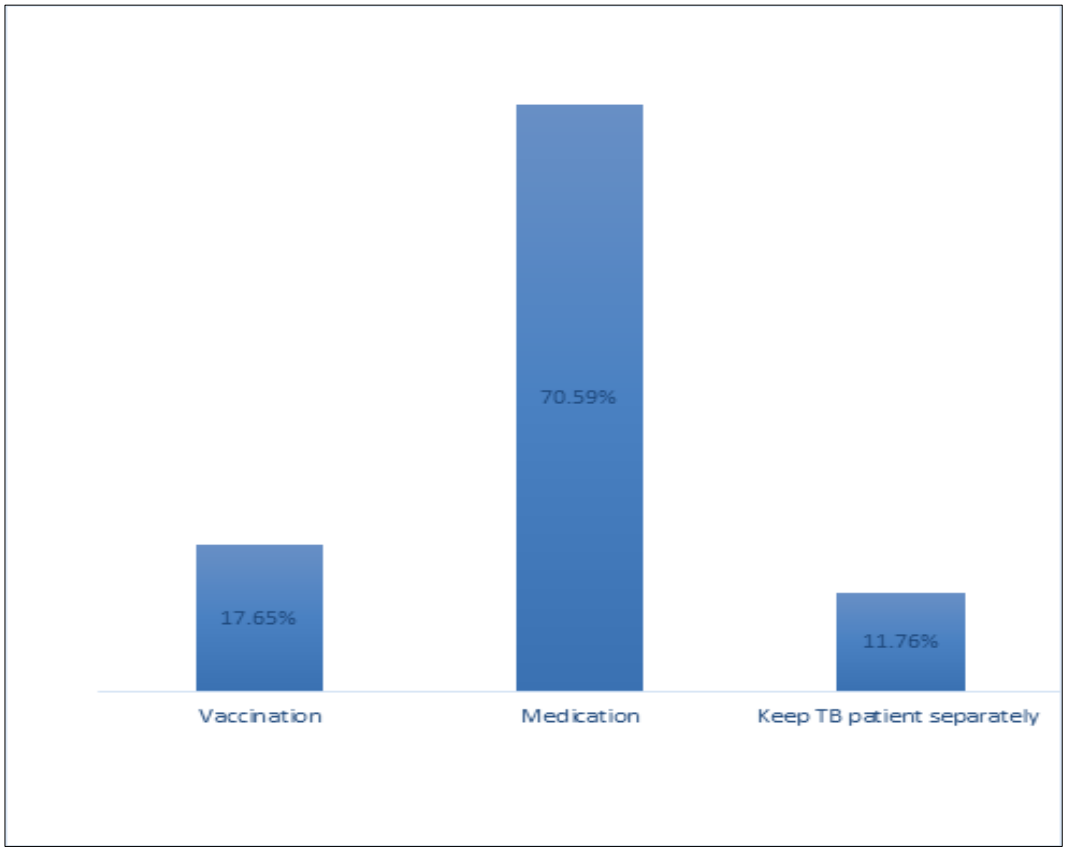


**Fig 5:** Distribution of the respondents according to awareness about prevention of tuberculosis

About 51.5% of the respondents told the period of vaccination is just after birth while 3.0% of them told the period of vaccination was in the time of pregnancy. About 45.5% of them told the time of vaccination was within one years of birth. About 2.2% of the respondents told the cause of TB was to live together with TB patient in the contest 13% of them told the cause of TB was handshake with each other. About 21.7% of the respondents told the cause of TB was taken germ through inspiration while 13% of the respondents told the cause of TB was not to wash hand properly after touching something. About fifty percentage 46.7% of the respondents told the way to free from TB was not to share food from each other's while 13.3% of them told don't handshake with each other's. About 26.7% of the respondents told the way to free from TB was to use

mask for avoiding cough and sneezing in the contest 13.3% of them told the way to free from TB was to wash hand properly after touching something.

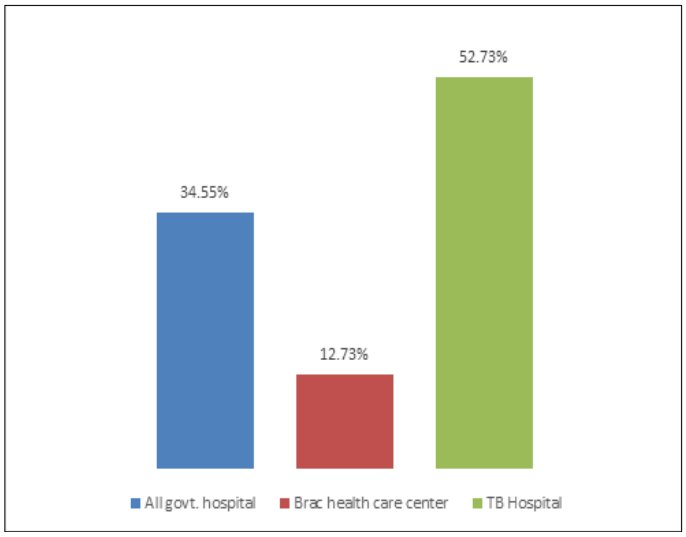


**Fig 6:** Distribution of the respondents according to awareness about treatment Centre of tuberculosis

52.73% of the respondents told that the treatment Centre of TB was only TB hospital while 12.73% of them told the treatment Centre of TB was BRAC health care Centre. 34.55% of them told the treatment Centre of TB was all Govt. hospital. Most of the respondents (63.2%) knew the treatment policy of infected person while 36.8% of them didn't know the treatment policy of infected person. About 56.2% of the respondents told the patient should keep separately after infected TB while 4.1% of them old patient should provide nutrition food. About 34.2% of the respondents told all the materials of patient should separate from others in contrast of that 5.5% of them told patient should keep in full rest.

Most of the respondents (90.6%) told TB can be investigated while 9.4% of them didn't know about the investigation. About 85.8% of the respondents told that TB can be investigated through cough while 14.2% of the respondent told TB can be investigated through blood. Most of the respondents (52.1%) feel compassion but like to stay away from TB patient while 3.4% of them told that community people try to help them. About 23.9% of the respondents told that they feel compassion and desire to help them in contrast 20.5% of them told that they think it was their problem and they doesn't like to be infected by TB. Among the respondents view 39.3% of them try to avoid TB patients from community in the contest 3.4% didn't like to talk about TB patients. About 29.1% of them like to help them while 28.2% of them like to avoid them personally.

## Discussion

A study in northern Ethiopia found Most (86.8%) had heard about pulmonary tuberculosis from health professionals (41%), friends (34.3%), relatives (14.5%), public radio (3.2%) and 5 (0.6%) television for the first time. Exposure to cold (37%), germ/virus (9.6%), malnutrition (4.5%) and poor sanitation (4.7%) were regarded as primary causes of PTB while 239 (33.3%) of respondents did not know the cause [11].

In this study finds the mean age of the respondents were (40.42±13.985) years. About 99.1% heard about tuberculosis, 69.8% heard about tuberculosis from television/radio 51.3% knew the cause of tuberculosis, 63.3% told the cause of tuberculosis is smoking 77.8% knew the affected group of tuberculosis, 50.55% of the respondents told that tuberculosis occurs in old age, 24.18% told that tuberculosis occurs in child age, 74.4% knew the gender group of TB, 93.3% of the respondents told that TB occurs mainly in male. About 52.1% of the respondents didn't know that it was a contagious diseases, 52.7% of the respondent told only those who were closed to TB patients. About 34.5% of the respondents told anybody can be affected by TB, 52.1% of the respondents knew the sign and symptoms of TB while 47.9% of them didn't know the sing and symptoms of TB. About 59.0% told the sing and symptoms of TB was bleeding through cough 69.2% of the respondents didn't know the prevention policy of TB,70.59% told the prevention policy of TB was medication, 69.2% of them knew the vaccination policy of TB. About 51.5% of the respondents told the period of vaccination is just after birth, 78.6% of the respondents didn't know the causes of TB, 52.2% of the respondents told the cause of TB was due to living together with TB patient, 71.8% of the respondents didn't know the way to be free from TB, 46.7% of the respondents told the way to free from TB was not to share food from other TB patients. 94% of the respondents told they knew the treatment of TB was total free of cost, 52.73% of the respondents told that the treatment Centre of TB was only TB hospital, 63.2% knew the treatment policy of infected person, 56.2% of the respondents told the patient should be kept separate after infection. About 90.6% told TB can be investigated, 85.8% of the respondents told that TB can be investigated through cough 52.1% feel compassion but like to stay away from TB patient 39.3% of them try to avoid TB patients from community. This study was nearly similar to the study of Mesfin *et al.* 2005 [11].

Research in study knowledge and attitudes of tuberculosis in Bastuharapara of Rajshahi is still in infancy, this study provides baseline information on knowledge and attitudes towards tuberculosis for people with and without TB in the new health district of Rajshahi. Despite the difficulties faced in Rajshahi to eradicate TB, the educational and other activities of the national TB control programme have had beneficial effects on the knowledge of TB.

## Conclusions

In this study, Lack of knowledge or insufficient knowledge of People with TB could favor the spread and transmission of disease within the population and thus compromise the effectiveness of the fight against tuberculosis. Therefore, it is responsibility of the Government and the head of the health district to focus on training of medical staff (physician, nurse) as well as education and awareness of population and patients. Education messages in simple language should be developed for the population to facilitate their understanding about TB. Treatment centers for tuberculosis need for nursing care and education given the number of People with TB. However, the reward of the best centers, fighting effectively against tuberculosis by a certificate of recognition and encouragement, could be a motivation for the team in their effort to combat tuberculosis. The issue of knowledge is crucial not only for people with and without TB but also for their families and communities. To prevent TB, patients should have good knowledge about the infection in order to have good attitudes

to stay healthy and limit the spread of the disease. Health worker need to emphasize the importance of knowledge and having proactive attitudes towards TB infection. To effectively combat tuberculosis, health professionals must be knowledgeable about the disease and competent in fundamental management principles. In terms of educational process, encourage knowledge and information sharing, promote reflection and analysis, improve critical thinking, and erroneous beliefs.

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