Report on

Utilizing Technical Assistance to Assess Capacity of Private Health Providers to Provide TB Services

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Utilizing Technical Assistance to Assess Capacity of Private Health Providers to Provide TB Services

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ABBREVIATIONS

BSc.	Bachelor of Science
BCom.	Bachelor of Commerce
BA	Bachelor of Arts
BAP	Bangladesh AIDS Program
BS	Blue Star
CBPHPs	Community Based Private Health Providers
DOTS	Directly Observed Therapy
HFWC	Health and Family Welfare Center
HSC	Higher Secondary School certificate
IEC	Information, Education and Communication
KAPP	Knowledge, Attitude, Perception and Practice
MBBS	Bachelor of Medicine and Bachelor of Surgery
NGMP	Non-Graduate Medical Practitioners
NGOs	Non-Government Organizations
NTP	National TB Control Program
PPS	Probability Proportional to Size Sampling
SMC	Social Marketing Company
SSC	Secondary School certificate
TB	Tuberculosis
UHC	Upazila Health Complex
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

SMC's goal is to increasing demand and access to the TB related services by involving Private Health Practitioners. A nationwide campaign focusing on key messages related to TB will be organized across the country. Different materials will be designed and developed to increase awareness on TB. In addition, private health providers in the selected areas will be trained on TB so that they can refer the suspect cases to the appropriate health centers. So, SMC awarded Pathway to conduct a baseline study of Knowledge, Attitude, Perception and Practice (KAPP) of the Community Based Private Health Providers (CBPHPs) and the community people on Tuberculosis (TB). The broad objective of the study was to assess the KAPP of the CBPHPs and community people within 2 kilometer radius of the selected providers with regard to TB and TB-DOTS. This study used structured questionnaires for conducting face to face interview by trained interviewers. The study targeted two groups of respondents, one on the demand side i.e. the general people, and the other is on the supply side (facilitating supply), the Non- Graduate Medical Practitioners (NGMPs). As per RFP, 606 NGMPs were interviewed where 304 were the registered NGMP by BLUE STAR network program and rest had same characteristics and were practicing in the same areas but not affiliated with BLUE STAR program. Using statistical formula a total of 1836 sample has been covered. The samples were allocated equally among the 6 divisions, resulting in approximately 300 samples (half male and half female) per division. So combining NGMP and household survey, a total of 2442 respondents were interviewed.

A. FINDINGS FROM NON-GRADUATE MEDICAL PRACTITIONERS

Background information of respondents

The mean age of the BS providers was 43 years while it was 38 years for the non-BS providers. Irrespective of type of providers and their residence, majority respondents (40%) had HSC/Alim/Diploma level education followed by SSC/Dhakhil 30 percent and BA/BCom./BSc./Fazil 23 percent . Among the BS providers 37 percent were RMP and 28 percent were LMF. The other professionals were diploma in pharmacy/medicine/DHMS/ DMF/DUMS/SMF 31 percent, rural doctor 25 percent , paramedics/SACMO 8 percent, and medical assistant 6 percent. Professionals having no education/training/degree were found more among non-BS providers than BS providers (6% vs. 1%).

Information about outlet and available services

About 94 percent of the providers of both BS and non-BS outlets are owners of the outlets and BS providers have six years of association with the BS network. The professional duration was higher for BS providers than non-BS providers (BS 19 years vs. non-BS 13 years). On an average 34 percent clients visit BS outlets per day while it is 25 percent for the non-BS outlets. Differences are found in providing child care, pregnancy care, and delivery care services which are nearly double for BS outlets than that of non-BS outlets. It is found that FP services varied noticeably between BS and non-BS outlet which is 92 percent and 37 percent respectively. The average monthly income of providers through outlets was 12348 taka where BS providers' income was higher than non-BS providers.

Observation findings of outlets

In order to measure the readiness of the outlets to provide quality services observation techniques was adopted. Findings clearly indicate that electricity, cleanliness, running water, visual and audio privacy, waiting space for clients, separate sitting arrangement and observation beds for clients was found reflective for BS and urban providers' outlet as compared to non-BS and rural providers' outlet.

KNOWLEDGE ON TB

Knowledge regarding reasons for infecting with TB disease

It was found that about three-fourth of the providers reported smoking as a top most reason which cause TB. Suffering from cold/cough for longer period is another factor of infecting with TB was reported by more than half of the respondents. Other two significant reasons were germs (48%) and living with TB patient (41%). About one-fourth of the respondents had knowledge that using tobacco leaf or living at crowded/densely area are the reasons which is responsible for infecting with TB diseases. It was found that there are no noticeable differences of different responses between BS and non-BS providers.

Knowledge regarding modes of TB disease transmission

Majority of the providers (89%) reported TB patient's cough/sneeze is the main mode of TB transmission followed by breathing of TB patient (52%), share utensils of TB patients (49%) and share bed/clothes of infected person (34%). However, misconceptions still persist among some of the providers such as blood transfusion is a mode of TB transmission.

Knowledge regarding symptoms of TB disease

Findings suggest that irrespective of divisions, types of providers and residence, 83 percent of respondents mentioned "cough for more than three weeks" as a symptom of TB diseases. Second highest symptom was "discharge blood with cough" (71%) which was slightly higher reported by the non-BS and rural providers as compared to BS and urban providers. Weight loss, mild fever at night, fever for longer period and loss of appetite were reported by 46, 41, 31 and 26 percent of providers.

Knowledge regarding preventive measures of TB disease

Only 68 percent of providers (Bs 62% vs. Non-Bs 74%) had knowledge "avoid smoking" as a preventive measure of TB disease. Each "ensure health environment" and "keep safe from TB patient" was reported by about half of the respondents. Not too high, yet "avoid discharging cough/breathing at every place", "vaccination" and "avoid tobacco leaf/nicotine" was reported by 39, 25 and 19 percent of respondents respectively.

Knowledge regarding tests of TB diagnosis and duration of treatment

Findings suggest that 97 percent of respondents reported cough test is appropriate for TB diagnosis irrespective of types of provider and their residence. In addition, two-third of them mentioned about blood test and about half stated X-ray test for detecting TB disease. Two percent of respondents had incorrect knowledge of TB diagnosis test. It was found that majority of the respondents correctly spelled the duration of TB treatment.

Knowledge regarding places of TB treatment

Majority respondents reported UHC (81%) as a place of TB treatment followed by NGO clinic (60%) and specialized TB clinic (57%). Other reported places of TB treatment were HFWC (16%), district GoB hospital (12%), private clinic (9%), MBBS doctor (8%) and BS outlet was reported by 2 percent of BS providers.

Knowledge regarding problems that may occur due to irregular use of TB medicines

About 98 percent of the respondents had knowledge that irregular use of TB medicines cause treatment problems. Those who stated problems among them 82 percent mentioned that patient will not be cured due to irregular use of medicines followed by 36 percent reported that irregular use of medicines may cause death to patients. Since irregular use of medicine does not cure disease, so 16 percent of them stated that TB germs will spread to others. Six percent of the respondents each claimed that patients need to repeat dose again and will grow resistance power in the body.

Knowledge regarding TB DOTS

Thirty percent of the respondents had knowledge of using TB medicine regularly. However, only 15 percent of the respondents reported that they had heard about TB DOTS which is quite low. In response to correct knowledge of TB DOTS, almost all the respondents know the correct implication of TB DOTS (among those who were aware about TB DOTS). Regarding the available facility of TB DOTS services, respondents mostly stated NGO clinic (57%) followed by UHC (54%), HFWC (13%) and TB clinic (8%). Other lowest reported TB DOTS service facilities were health/NGO workers and medical college/hospital. About universally (98%) respondents are aware that TB can be fully treated under certain conditions. The highest reported condition was use full course of medicines (92%) followed by ensure timely testing cough/blood and starting treatment timely (48%). Majority respondents reported UHC as referral place for TB treatment (49%) followed by TB clinic (32%) and NGO clinic (29%). Other reported places for referral services were government hospital/medical college (5%), MBBS doctor (4%), private clinic (3%) and HFWC (3%).

PRACTICES OF TB SERVICES

TB services provided by the providers

Findings reveal that nationally only 9 percent of providers are currently providing TB services (Highest in Dhaka 17% and lowest in Sylhet 4%) which is quite poor. Findings also reveal that BS and urban providers are providing TB services as compared to non-BS and rural providers. It was also revealed that only 11 providers mentioned that currently patients are taking TB medicines under their supervision.

Reasons for providing referral services of TB

The respondents who provide TB services among them almost all of them basically providing referral services as they are lacking with necessary equipment or logistics to offer TB services to the clients. Findings suggest that majority of the respondents refer their patients for proper treatment (82%) followed by testing cough/blood (44%), for receiving advice from specialist (19%) and other responses (2%) which includes for free medicine/Tuberculin test.

Providers reported problems to provide TB services

The respondents who provide TB services among them more than one-fourth reported that they faced different problems to provide TB services to the patients. Lack of testing facility was reported by the 60 percent of the providers followed by training on TB services (50%). Thirty percent of them stated that GoB is providing free services. Lack of medicine for treating TB patients was also reported by 10 percent of the providers. However, one important alarming statement is that provider may be infected through TB patient and which was reported by 10 percent of the providers.

Reasons for not providing TB services

It is evident that lack of training on TB services, lack of testing facility to diagnose suspected TB cases and opportunity to avail free services by the GoB facilities discouraging providers to offer TB services. Lack of training was claimed by 46 percent of BS and 61 percent of non-BS providers. However, quite higher proportion of BS providers claimed lack of facilities for testing TB suspected patient as compared to non-BS providers (BS 49% vs. non-BS 38%). In addition to these reasons, slightly higher proportion of BS providers as compared to non-BS providers (BS 36% vs. non-BS 31%) stated that they are not providing TB services as currently GoB is providing free services to the TB patients.

Providers' perceptions regarding prevention ways of TB disease

Findings revealed that majority of the respondents stated avoiding smoking (69%) followed by living healthy environment (56%) and increase awareness among people (52%) can help to prevent TB. On the other hand, keep away from TB patients and avoid coughing at every place, each was suggested by 40 percent of the respondents. Two other important issues like vaccination and avoid nicotine leaves *(sada pata/ jorda)*; each was reported only by one-fifth of the respondents.

MEDIA EXPOSURE AND PROVIDERS WILLINGNESS TO PROVIDE TB TREATMENT

Media exposure of respondents

Ninety six percent of the providers stated that they have heard or seen advertisement on TB where television is fur the most important source of media vehicle (81%). Other important sources which range from 27 to 21 percent were training, billboard/signboard, and poster/leaflet. Those who have heard about preventive measure and treatment about TB from training (27%), they have received training from BRAC (41%) followed by UHC (37%), NGO (5%) and GoB hospital (4%). On average the duration of the training was 2 days. In general, findings revealed that 10 percent of the providers stated that they received training on TB where 54 percent from BRAC, 19 percent from UHC and NGOs. On average the duration of the training was 2 days.

Providers' willingness to provide TB treatment/services

Findings revealed that about 9 out of 10 respondents mentioned that the providers in their locality will be interested to provide TB treatment. Similarly same proportion of providers reported that they themselves are willing to provide TB treatment. Among the 12 percent of respondents who were unwilling to provide TB treatment, mostly they stated time constraint (49%) followed by hospital nearby (19%) and lack of training (18%). Lack of faith to provider, TB patient never visit their clinic, patient may be irritated due to side-effects and lack of equipments and medicines are also reported by 11, 10, 8 and 8 percent of respondents respectively.

Providers seeking supports to provide TB DOTS services

Ninety two percent of BS and 87 percent of non-BS providers emphasized for organizing training program on TB followed by free supply of TB diagnosis equipment (BS 49% vs. Non-BS 37%) and free supply of drugs and medicines (BS 39% vs. Non-BS 41%) to provide TB DOTS services. In response to receive support from SMC, majority of the providers (BS 84% vs. Non-BS 82%) sought for arranging training on TB. In addition, the providers also emphasized TB patient management equipments (BS 38% vs. Non-BS 26%) and ensuring free supply of drugs and medicines (BS 51% vs. Non-BS 41%). Supporting through financial assistance/honorarium by the SMC was stated by 8 percent of BS and 13 percent of non-BS providers. On the other hand, instead of direct support about 6 percent of providers requested motivational activities at community level by the SMC for providing TB treatment. Since this is a multiple response, so a holistic approach of a combination of these supports would be a great opportunity to ensure their involvement in providing TB services or treatment.

B. FINDINGS FROM COMMUNITY PEOPLE

Background information of respondents

The mean age of the respondents was 32 years where the age of male respondents was 33 years and the female was 31 years. Findings reveal that majority completed primary education (60%), 11 percent didn't complete primary education (less than 1 percent were illiterate), 16 percent completed SSC education, 9 percent HSC and only 4 percent completed higher education. Regarding the marital status of the respondents, findings reveal that about three-fourth of them were currently married and one-fifth were unmarried. The average monthly income of the family was around Taka 8400 per month. Observing occupation by sex it is found that majority of female respondents were housewife (82%) followed by student (6%) and agriculture/agriculture labor (4%). On the other hand, 42 percent of male respondents' occupation was business followed by agriculture/agriculture labor (13%) and service (11%).

Information about BS outlet and available services

About 19 percent of the respondents were aware that there was BS outlet in their locality and the awareness level was quite high among the male respondents (male 26% vs. female 11%). It was also found that comparatively lower proportion of respondents from Chittagong (10%) and Rajshahi (14%) were aware about BS outlet in their locality. The average distance from respondents' home to BS outlet was less than 1 kilometer. Mostly respondents visited BS outlet for receiving general curative care services (91%) followed by FP (23%) and child care (13%) services.

KNOWLEDGE ON TB

Awareness and sources of TB

About cent percent of the respondents reported that they have heard about TB. It was found that mass media (81%) was the highest reported source of information followed by neighbor/elite person (45%). It is also evident that in addition to mass media and neighbors/elite person, both GoB and NGO workers are the important source of gathering TB information especially for the females (male 13% vs. female 20%).

Television was by far the most important media vehicle that was reported by 97 percent of the respondents. Other sources were radio (16%), signboard/billboard/wall painting (10%), newspaper/ magazine (8%), leaflet/poster (4%) and mobile film/text book/announcement through mike.

Knowledge regarding reasons for infecting with TB

Findings revealed that overall 12 percent of the respondents (even slightly higher for female and rural respondents) did not know the reasons for infecting with TB diseases. It is found that 67 percent of them reported smoking as a top most reason which causes TB and this proportion was quite high among male as compared to female respondents (male 81% vs. female 52%). Suffering from cold/cough for longer period is another factor of infecting with TB was reported by 42 percent of the respondents (male 34% vs. female 50%). Using tobacco leaf (*sada pata/jorda*) was reported by 25 percent of the respondents, living with TB patient by 15 percent and germs by 12 percent. Eight percent of the respondents had knowledge that living at dirty/damp area and living at crowded/densely area were reported by 8 and 3 percent of respondents respectively as the reasons which is responsible for infecting with TB diseases.

Knowledge regarding modes of TB disease transmission

Overall, 82 percent of the respondents could report any modes of TB disease transmission and 18 percent could not mention any modes of transmission. Majority of the respondents (58%) reported TB patient's cough/sneeze is the main mode of TB transmission followed by sharing utensils of TB patient (46%), sharing bed/cloths of TB patients (29%) and breathing of TB patients (26%).

Knowledge regarding symptoms of TB disease

Irrespective of divisions, types of providers and their residence, 69 percent of respondents mentioned "discharge blood with cough" as a symptom of TB diseases (Male 64% vs. female 75% and urban 66% vs. rural 71%). Second highest symptom was "cough for more than three weeks" (66%) which was slightly higher reported by the rural respondents as compared to urban. Fever for longer period, mild fever at night, and weight loss, each was reported by 13 percent of the respondents. In addition, 9 percent reported chest pain and 7 percent mentioned loss of appetite as a symptom of TB disease.

Knowledge regarding preventive measures of TB disease

Only 60 percent of respondents (Male 75% vs. female 44%) had knowledge "avoid smoking" as a preventive measure of TB disease. "Keep safe from TB patient" was reported by 28 percent of males and 45 percent of females. "Ensure healthy environment" is one of the important preventive measures of TB disease, which was reported by about one-fourth of the respondents. Each "avoid discharging cough/breathing at every place" and "avoid tobacco leaf/nicotine (*sada pata/jorda*)" was reported by 15 percent of the respondents. Too small, yet "vaccination" and "keep safe from cold" was reported by 8 and 2 percent of respondents respectively.

Knowledge regarding tests of TB diagnosis and duration of treatment

In response to requirement of TB diagnosis, 98 percent of the respondents emphasized it is prerequisite. Further knowledge on TB diagnosis test was explored and it was found that 88 percent of respondents reported cough test is appropriate for TB diagnosis irrespective of divisions, type of respondents and their residence. In addition one-third of them mentioned about blood test and only 13 percent stated X-ray for detecting TB disease. Six percent of respondents had incorrect knowledge of TB diagnosis test.

Knowledge regarding places of TB treatment

Survey findings reveal that 68 percent of the respondents reported UHC as a place of TB treatment (Male 74% vs. female 63% and urban 52% vs. rural 77%) followed by TB clinic (32%), NGO clinic (26%) and MBBS doctors (16%). Other reported places of TB treatment were district hospital/medical college (14%), HFWC (12%), private clinic (9%), health worker (3%), village doctor (3%), BS clinic (2%) and pharmacy/drug seller (2%).

Knowledge regarding TB DOTS

Findings revealed that only 4 percent of the respondents had knowledge of using TB medicine regularly and most of them from Dhaka (9%) division. On the other hand, only about 1 percent of the respondents reported that they had heard about TB DOTS. About half of the respondents mentioned avoid smoking as an important requirement of TB treatment.

ATTITUDE REGARDING TB

Attitude of neighbors towards TB patients

Half of the respondents stated that community behaves well with the infected person. However, about 48 percent of the respondents also stated that community maintains a certain distance from the infected person (Such as they do not move together). About one-fourth of them reported that community people advice patients for treatment. On the other hand, 10 percent of the providers claimed that community isolates the infected persons from their society.

Perceptions regarding severity of TB disease

In response to respondents' perception about the severity of TB disease, 46 percent perceive TB as very dangerous disease, 12 percent mentioned dangerous and 6 percent stated as moderately dangerous. However, only one-third of the respondents perceive that TB is not dangerous or not dangerous at all. About one-third (73%) of the respondents perceived TB as dangerous as it cause death followed by pass blood with cough (25%), life become miserable (16%) and neglected by the society (10%). In addition, 9 percent of the respondents stated TB as dangerous disease as it causes loss of appetite/weight/makes thin, 8 percent claimed loose working ability. It reduces income and transmits from infected person to others each was reported by 6 percent of the respondents.

Perceived reasons for hiding suspected or infected TB case by the patients

Study separately collected information for males and females to explore the possible reasons for hiding suspected or infected TB cases by the patients. Majority females hide their disease due to fear of ignorance by the society/people may hate them (79%). Fear to be isolated from society was reported by one-fourth of the respondents. One-fifth of the respondents stated that females hide their disease due to fear of being separated by the husbands and 15 percent stated due to fear of getting married.

On the other hand, 78 percent of respondents stated that due to fear of ignorance by the society or people may hate them was prime reasons for hiding TB disease by males followed by fear to be isolated from the society (26%) and wife may separate (11%) him. Another important issue "problems at working place" was raised by the 10 percent of respondents. Smoking is one of the important causes of infecting with TB and 8 percent of the respondents stated that male hide TB disease due to continue their behavior of smoking.

Perceived reasons for not using medicines regularly by the patients

The prime reasons for irregular use of medicines both by male and female was "felling better temporarily" (male 39% vs. female 36%) followed by "lack of money" (male 37% vs. female 34%), "unwilling/laziness to use medicines" (male 36% vs. female 34%), "lack of awareness" (male 22% vs. female 18%), "forget to take medicines" (male 21% vs. female 22%) and "busy for work" (male 20% vs. female 22%).

Intention of community people to learn about TB and its expected sources

Findings suggest that 87 percent of the respondents irrespective of the sex and their residence stated that community people will be interested to learn more about TB diseases mostly through television (63%) followed by GoB and NGO workers (54%).

Conclusions and recommendations

Based on the above discussion of the study findings the following conclusions and recommendations can be made for non-graduate medical practitioners and community people:

1. Knowledge level of non-graduate medical practitioners regarding TB disease comparatively is not up to the mark, especially knowledge regarding TB DOTS is poor. On the other hand, knowledge level is quite poor among the community people in terms of reasons of infecting with TB, modes, symptoms and prevention measures of TB. So, there is a great scope to address both the groups to improve their level of knowledge regarding TB disease.

2. As the GoB and NGO (especially BRAC) has a successful story to ensure regular use of TB medicines through different outlets in assistance with fieldworkers and volunteers. On the other hand, non-graduate medical practitioners are potential in their locality for providing services to a good number of clients each day. In this circumstance, involvement of non-graduate medical practitioners for providing TB DOTS services will be an added advantage for the government.

3. There is lack of proper knowledge among the non-graduate medical practitioners about TB DOTS services. However, due to their potentiality and considering the higher prevalence of TB diseases, we may involve them in the TB DOTS program under addressing certain prerequisite requirements. Essentially they need proper training on TB DOTS services. However, a combination of different holistic approach may bring a success and sustainable TB DOTS program such as support through necessary logistics includes free supply of diagnosis materials, drugs and medicines.

4. Eventually it is mandatory to approach both community and non-graduate medical practitioners together to improve their knowledge on TB and TB DOTS services to maintain a harmony between demand and supply requirements. Otherwise, addressing only community people or only non-graduate medical practitioners for improving knowledge and making available services may cause imbalance between demand and supply of TB DOTS services.

5. Though knowledge level of TB DOTS is quite low among the providers as well as community people. Yet, it is observed that those providers or community people have heard about TB DOTS they correctly know about its implication. So, undoubtedly it can be recommended that awareness raising program on TB DOTS will bring a great success to control TB disease in Bangladesh.

6. Selection of proper media vehicle is an important aspect for improving knowledge level of community people regarding TB and TB DOTS services. Though different media vehicle can be targeted for different segment of population considering their level of education and socio-economic status, yet study findings found that television is by far the most important source of channel for disseminating information about TB diseases. In addition, involvement of non-graduate medical practitioners for disseminating information about TB disease may be another great scope for strengthening existing TB DOTS program.

7. Lack of proper knowledge about any dangerous, contaminated or infected diseases lead certain behavior in the community towards the patients. Findings suggest half of the community respondents perceive that patients are ignored in the society. This can be easily minimized through disseminating proper information among the community people about TB disease and its treatment. In addition, a large proportion of community people also perceive that TB cause death. So before selecting a preferable media vehicle we need to identify some key messages through pretesting facility.

CHAPTER ONE

1.1 Overview of SMC

Social Marketing Company (SMC) is the largest privately managed social marketing organization in the world for a single country. SMC's mission is to improve the quality of lives of vulnerable and less privileged populations primarily in public health through sustainable social marketing efforts in collaboration with national and international governments and donors. The concept of social marketing came to Bangladesh in 1974 when the social marketing project was initiated to challenge rapid population growth through BCC/IEC program and by making contraceptive products widely accessible at a price affordable to the general people.

SMC has been significantly contributing to the overall success of national reproductive and child health program. In 2007, SMC provided 3.94 million CYP through offering three modern methods - oral pills, condoms, injectable. As BDHS 2007 shows, 34 percent of the modern contraceptive users reported that they use SMC brand contraceptives. SMC is significantly contributing in effective diarrheal management program as well. SMC sold 183 million sachets of ORS during FY 2007.

SMC's current product lines includes five condom brands (Raja, Hero, Panther, Sensation & U&ME), three oral contraceptive pills (Nordette-28, Femicon & Minicon), Injectable contraceptive - SOMA-JECT, two packaged ORS (ORSaline and ORSaline Fruity) and micronutrient product for under five children- Monimix® . The Company has a little over 100 sales personnel who are distributing products to more than 223,000 retail outlets countrywide.

The major programs SMC implement includes maternal health, child health and STD/AIDS Prevention Program. The major support programs SMC implements include customer education program and health communication program. SMC enhances the capacity of the private medical practitioners to offer clinical contraceptive method (injectable) through its Blue Star Program. It works through a network of 3600 private medical practitioners as a new channel for marketing the clinical contraceptive (currently Injectable) with high quality of service-delivery.

SMC implements Health Providers Training Program through which knowledge and skill of private sector health providers including drug sellers and rural medical practitioners are strengthened in order to better over-the-counter services including counseling for family planning methods. SMC addresses the issue of reduction of the transmission of STD & HIV/AIDS among the defined high risk populations through its "Shurockkha" program which is currently being implemented under Bangladesh AIDS Program (BAP).

Mobile Film Program (MFP) is considered as one of the important strategies to reach the rural population. The objective of operating MFP is to educate people on health issues through enter-education films. The program includes messages on family planning, child and maternal health, diarrheal management, HIV/AIDS prevention and other social priority issues like anti-trafficking and education.

1.2 Scenario of TB disease

The threat of tuberculosis (TB) exists on a both global and local scale. Globally, it is estimated that TB kills 5,000 people a day – and more than 2 million each year. One third of the world's population is infected with TB. In context of Bangladesh, it is estimated that 50 percent of the adult population is infected with the germ, with 300,000 new cases being detected every year. In terms of mortality rate, TB causes 70,000 deaths per year. There is also a poverty dimension to the disease - as incidence is believed to be higher in densely populated, low-income urban areas with poor living conditions.

Tuberculosis is a major public health problem in Bangladesh. In 2006, World Health Organization (WHO) ranked Bangladesh sixth among the world's 22 high-burden TB countries. More than 319,000 new cases, including 143,000 sputum smear-positive (SS+) pulmonary TB cases and 70,000 TB-related deaths occur annually. Bangladesh's National TB Control Program (NTP) began implementing Directly Observed Therapy, Short-Course (DOTS) in 1993. By the end of 2004, the NTP estimated DOTS coverage was 99 percent.

While the treatment success rate is fairly high at 85 percent, less than half (44 percent) of the cases are detected, resulting in a larger number of untreated carriers who spread the disease still further. This is primarily due to lack of full implementation of DOTS by all public health facilities, private sector providers, and nongovernmental organizations (NGOs). Given that private practitioners and NGOs provide a major portion of health services, implementation of DOTS by NGO projects and within the private health care system is paramount.

In Bangladesh, a host of factors combine to increase the susceptibility of the population to TB. Inadequate diagnosis and treatment facilities for the masses, poor socio-economic conditions, and emergence of multi-drug resistance are all causes behind the large-scale prevalence of the disease. Moreover, there are large gaps in behavioral patterns of those infected, as it is frequently observed that many patients for a host of reasons are either not aware of TB symptoms or do not seek diagnosis and treatment even if coughing persists for 3+ weeks.

There are various programs that have been implemented in the social development sector of Bangladesh by both GOB and NGOs that seeks to address such concerns. While these interventions have had notable achievements- for example, the present cure rate of detected cases under DOTS is 84 percent- there are still large gaps existing in the behavior of health consumers and capacity of health providers that makes the situation far from desirable.

1.3 Literature Review on Health Seeking Behavior

The TB control community has recognized that behavior of both "suspects" and infected individuals is a key issue when it comes to addressing the problem of TB. Both diagnosis delay and non-completion of treatment are two central behavioral challenges that exist among health consumers. Success in TB detection and treatment requires specific behaviors from patients and health care providers within contexts that facilitate those practices.

There are a variety of factors that cause behavior of health consumers to be far from desirable. When it comes to seeking diagnosis, factors such as lack of awareness about the disease, the stigma attached to being identified as a victim, and external constraints such as low education and income,

all serve to delay treatment-seeking behavior among suspects. And, among those infected, treatment default-related problems may arise due to factors like poor knowledge about treatment duration, misperceptions about well being, lack of knowledge of potential side effect, poor quality of provider patient interactions, etcetera.

Given the difficulty in predicting which patients will adhere to the anti-TB regimen prescribed, many health organizations now support the DOT strategy in TB treatment. The DOT strategy in fact responds to behavioral challenges in TB control, whereby patients are kept under direct observation and supervision to ensure that appropriate behavior is being conducted. Recent studies seem to support the rationale behind those decisions, as treatment completion rates are higher among patients with direct supervision rather than among those with no supervision.

In general, attributes of health seeking behavior in the third world countries is a challenge to tackle any form of communicable disease in this region. For example, self-diagnosis and self-treatment is often found among people; such is the case in Nigeria regarding issues of malaria (Uzochukwu, 2004). This also applies to tuberculosis specifically. Various studies on this issue specific to the third world reveal prevailing health seeking behavior as well as knowledge and attitude towards tuberculosis. According to the 2003 Scandinavian Journal of Public Health, "Our findings indicate an association between know-ledge levels and education, media access, and gender, and highlight the complexity of successful health communication". (Hoa, 2003)

When DOTS was introduced in Nepal, gender differences in health seeking behavior were observed. Overall, treatment delay was caused due to visit to traditional healer and women tended to have larger delays than men. However, a study in Vietnam found that more women than men sought treatment for their symptom cough. Evidence of knowledge gap was found in the study, especially for women (Yamasaki-Nakagawa, 2001).

High burden of TB is associated with poverty (Stop TB, 2007). Not only most of the high-burden countries are low-income countries, but also, at the individual country level, it is the poorer population who are infected by TB more often. Even in United States, the relatively low-income communities of African Americans have high TB incidence and case studies have shown stigmas are still associated with TB as well as large gaps of knowledge regarding TB still exist (TB Control South Carolina, 2005).

The general health seeking behavior in Bangladesh is highly shaped by poverty as well. Studies have shown that "improving capacity for health-expenditure and grant based interventions initiated the health-seeking behavior of the ultra-poor towards greater use of health-care when ill and use of formal allopathic providers in preference to unqualified providers" (Ahmed, 2005).

1.4 Role of Communication in TB Prevention & Control

In the path of fighting TB as a public health disease, health seeking behavior of the masses is no doubt a major barrier. What is fundamental is to make sure people are well informed regarding TB and its treatment and that TB associated stigma is reduced as much as possible. Information is vital and thus communication is crucial. Placing communication material with facts are not enough. The design of those materials specific to cultural absorption ability and local values are just as important. The TB

control community has placed various well-designed communication methodologies in place to tackle the problem of health seeking behavior and lack of information regarding TB and its treatment in order to increase awareness and to bring change of behavior. The success and laggings of these programs vary from country to country and their evaluations create room for improvement in attaining TB control goals.

A study regarding the impact of IEC (information, education and communication) campaign in Delhi, India reveals overall high level of awareness regarding the messages exposed in the campaign. However, variation was found when it came to knowledge about specific information such as sputum test. Although self-reporting became more frequent after the IEC campaign, in the bigger perspective it was still low. The study shows particular concern that the IEC message, especially regarding self-reporting, had less influence on the poor and disadvantaged populations of the city of Delhi (Sharma, 2005). Similar findings are reported in Vietnam, where the marginalized, illiterate populations with lower socio-economic conditions have lower level of awareness regarding TB (Hoa, 2004).

In another study carried out in Cali, Colombia on the impact of media-based education on TB diagnosis, at least 49% of the population was exposed to the messages attaining positive impact on case findings due to increasing knowledge about cough as a symptom for TB. This campaign was a short lived one and once the campaign was stopped, its effects were lost (Jaramillo, 2001).

On the other hand, Brazil is one of the few countries to have conducted national media campaigns to raise awareness regarding TB. Even though the campaign was carried out at a time when awareness about TB was already prominent among the population, the success of this campaign in involving private media sectors as well as to gather funding for airtime via private sector donations is a great lesson. Also, the campaign was able to impact on the health seeking behavior of the population; an increase in seeking sputum test was found TB patients found incentive in the media spots to continue treatment (Head, 2006). Very few health campaigns are found to achieve such changes in behavior, even though they often impact the knowledge and attitude of the target population. The success of this particular campaign can be explained by the entertainment value placed on the spots and the large number of broadcasting times.

The communication campaign of Peru is another success story and provides lessons for using communication program in diminishing spread of TB. Their campaign was made up by integrating advocacy, mass media campaigns, interpersonal communication and counseling, community mobilization as well as incentive programs; making sure all aspects are connected and spread coherent and consistent messages. Implications of Peru's communication program show that it is essential to seamlessly integrate communication into all levels starting from politicians, private entities to the masses and hard to reach population. Easy-to-understand messages via a mix of mass media and interpersonal communication helped people to recognize TB cases (Fernandez, 2004).

The timing, integration and coordination of communication activities in fighting communicable diseases are essential. These aspects of communication are location and culture specific. An exploration of situation regarding the role of communication in Bangladesh for TB control can help us understand if any gaps exists, how to improve those and to prioritize steps in accordance with those needs.

1.5 Background of the study

SMC's goal is to increasing demand and access to the TB related services by involving Private Health Practitioners. A nationwide campaign focusing on key messages related to TB will be organized across the country. Different materials will be designed and developed to increase awareness on TB. In addition, private health providers in the selected areas will be trained on TB so that they can refer the suspect cases to the appropriate health centers.

SMC is interested to conduct a baseline study of Knowledge, Attitude, Perception and Practice (KAPP) of the Community Based Private Health Providers (CBPHPs) and the community people on Tuberculosis (TB). These survey findings will be utilized to understand current level of KAPP among the providers and community people relating to TB and identify the gap in this regards to design the program interventions.

1.6 Rationale for the Study

There are some TB programs already operating in the country. Also, there are some awareness campaigns via mass media such as television and radio as well as via posters and leaflets. These communication programs are in place for quite a long time. However, it is believed that there is still scope for improvement of health seeking behavior on TB.

A baseline survey is contemplated so that information on prevailing KAPP on TB and awareness level and attitudes towards the media campaigns could be assessed.

1.7 A Need to Assess and Benchmark the Impact of SMC's Program

If the TB control community is to effectively respond to behavioral challenges, there is a need to properly understand the factors that cause gaps and laps in KAP of the general population. In Bangladesh behavioral barriers are many - some of which are at individual level, while the rest are at community and structural level.

It is evident that lack of knowledge, time, money and loss of income act as important barriers to health consumers to seeking TB DOTS services. Non-availability of the services and or poor access to health care facilities may also act as a barrier. Other barriers are caused by perceptive lacking, as many perceive that they are not susceptible to the germ, even when experiencing clear-cut symptoms. Again, lack of perception of susceptibility often leads to the perception of no benefit perception of diagnosis. Further as TB infected persons do not always develop into TB patients, people with similar background feel equally safe without the screening and preventive measure.

As a patient may have to overcome such socio-cultural, external, and economic barriers to seek screening and care, a proper program should also be able to address such barriers to ensure that those requiring treatment seek it timely and properly. Further, once diagnosed positive, a patient needs to continue the treatment. In this context, it is important to seek out answers for questions like:

- What are people aware of TB: Its causes, symptoms, transmission route, ways of prevention and treatment? Are they aware that TB is curable?

- How people consider TB prevention behavior?
- Are people aware of where diagnosis and treatment available?
- Are people aware of Blue Star Service Centers, its services, location, TB services and referral services from BS outlet?
- What is the current practice of TB patients in the locality?
- From what all sources they have known about TB and its management? What is the frequency of exposure to such sources?
- What are the factors that restricted positive behavior or discouraged positive behavior?
- What is the attitude of the NGMP towards TB patients? Whether they have received any training on TB and TB DOTS?
- What are the services offered by the NGMPs to TB patients, and whether they face any problem during such services?
- What are the expectations of the NGMPs from SMC to offer TB services?

Such questions can be answered by a study that investigates into the knowledge, attitude and practices of health consumers in context of TB, and what they plan to do in case they face symptoms. Moreover, it is also important to find out how health consumers actually behave when it comes to seeking diagnosis and treatment. For this purpose, it becomes necessary to investigate into how much a TB-infected person actually knows, and how he or she actually behaves when it comes to seeking treatment. The results of the study can subsequently contribute to minimizing behavioral barriers to improve case-finding and treatment adherence rates, particularly among at-risk populations.

Also, SMCs program will add newer thrust by including the NGMPs with renewed emphasis on them for TB control. Their current Skills, KAP, Needs, and willingness will dictate how the program will be shaped. Eventually at periodic intervals the outcome and effect of the program can be assessed against the baseline developed via the proposed study.

1.8 Purpose of the Study

The broad objective of this study was to assess the KAPP of the Community Based Private Health Providers (CBPHPs) and community people within 2 kilometer radius of the selected providers with regard to TB and TB-DOTS. While the information coverage for this study were as follows:

1.8.1 Private Health Providers

Profile

- Level of education
- Income
- Experience
- Age
- Sex

Average patient load

- Male, female and children
- Pharmacy or clinic ownership
- Outlet profile-physical facility

KAPP of the providers

- Knowledge regarding TB and sources of information ~ reasons for TB and how to prevent TB
- Knowledge regarding treatment of TB
- Knowledge about the location of TB DOT providers
- Attitude of the providers to provide services to the TB patient
- Whether they have received any training on TB and TB DOT
- Interest of the providers to include TB related services and TB DOT
- Health seeking behavior of the community people for TB
- The service that providers offer currently to TB patients
- Whether they face any problem during TB treatment
- What support the providers expect from SMC to offer TB services

1.8.2 KAPP of the Community People on TB

Profile

- Age
- Education
- Sex
- Family income

Service delivery points

- Awareness about the selected Blue Star service center
- Distance of the Blue Star service center from the residence of the respondents
- Whether the respondent received any services from BS center

KAPP

- Knowledge regarding TB and sources of information ~ reasons for TB and how to prevent TB
- Knowledge regarding treatment of TB
- Knowledge about the location of TB DOT providers
- Attitude towards treatment seeking for TB
- Attitude of the community people towards TB patients
- Whether the community people want to get information on TB and how
- Health seeking behavior of the community people for TB

1.9 Methodology of the Study

1.9.1 Study Design

This study was a national representative cross-sectional household survey in Bangladesh. In addition, it has covered a nationally representative sample of NGMPs from BS and other outlets. The study was a large-scale quantitative survey among the specific target groups. Both men and women were included in the study, and a representative sample was drawn from selected NGMP areas of Bangladesh. Exposure to TB campaigns, health seeking behavior and their knowledge, attitude and modifying factors have been assessed through interview. This study used structured questionnaires for conducting face to face interview by trained interviewers.

1.9.2 Study Population

The study targeted two groups of respondents, one on the demand side i.e. the general people, and the other is on the supply side (facilitating supply), the NGMPs.

1.9.3 Definition of Target Group

Since the research was conducted among the community members regarding TB and TB DOTS, a clear definition of research target group was mandatory. Therefore, the respondents were divided into the following categories:

Community People– the general population targeted by the study comprise men and women who were aged at least 15 years or above. Special care has given to cover both unmarried and married men and women in the study, also to ensure that the gender dimension of TB has been adequately addressed.

NGMPs - 1) non-graduate medical practitioners of BLUE STAR network program, and 2) NGMPs not affiliated with BLUE STAR program but having similar characteristics like BLUE STAR non-graduate medical providers.

The community people have been selected irrespective of their socio-economic status, but age group considered at least 15 years or above. Although the RFP of SMC specified that the target respondents should be 18 years or above, it has been found that in Bangladesh people, particularly in the less well off and those living below poverty line start work and go out for livelihood much earlier than the age of majority (18 years). This puts them at greater risk of exposure to TB. Further, many children work in tobacco industry, congested factories, and in various risk situations conducive for TB. Therefore, this at risk population needs to be understood. Further, it has been noticed in many health studies that 15+ populations are also quite vocal in responding. That is why the study covered 15+ populations.

1.9.4 Sample Size Calculation

NGMP survey: As per RFP, 600 NGMPs were interviewed where 300 were the registered NGMP by BLUE STAR network program and rest had same characteristics and were practicing in the same areas but not affiliated with BLUE STAR program.

Household survey: The following statistical formula was used to calculate the national sample size for the household survey. The sample size determination formula was as follows;

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where 'n' is the required minimum number of statistically significant interviews; 'z' is the confidence level (the table value of at least 95% is 1.96);'d' is the tolerable error of estimates (if +/- 6% is allowed, the value of d = 0.05); 'p' is a certain proportion in the universe, which is unknown and thumb rule is p=0.5 and 'q' is the reciprocal of 'p'.

The sample size thus derived 384 for each randomly selected population. But the study followed a multistage stratified sampling design whereby, divisional, urban-rural, male-female representation was ensured. So there was a chance to incur design effect (DE). Conventionally it has been seen that with this kind of sampling design, the DE is 1.5 to 2.5. In this particular study we considered a DE of 2.25, which yielded a sample size of 864 for any population. For convenience and also considering non-response 900 samples was finally proposed each for male and female. Hence, a total of 1836 sample has been covered. The samples were allocated equally among the 6 divisions, resulting in 300 samples (150 male and 150 female) per division. So combining NGMP and household survey, a total of 2442 respondents were interviewed.

1.9.5 Sample Area Selection Procedure

As per the RFP provided by SMC, approximately 600 NGMPs need to be interviewed where 300 from BLUE STAR network and rest were not affiliated with BLUE STAR program. On the other hand, according to information provided by SMC, there were approximately 3111 NGMPs under BLUE STAR network in Bangladesh. So, on an average there were approximately 6-7 BS-NGMPs in each upazila. So to get required number of sample for NGMP we reached at least 48 upazilas for covering required samples.

A multi stage stratified sampling procedure was followed to cover sample location. At the first stage 2 districts were selected from each division following PPS (probability proportional to BS-NGMP highest size). As the divisional cities showed highest concentration of BS NGMPS, those had automatically the highest probability to be selected. The other district was likely to have moderate number of NGMPs. Hence, in all 12 districts were selected. The study attached relatively higher importance to upazila levels. Hence 12 sadar upazilas and 36 upazilas other than sadar upazila (i.e., 4 from each district) have been selected randomly from the selected twelve districts. So in total 48 sample locations from 48 upazilas where NGMPs of BLUE STAR network exists has been selected to obtain the required number of respondents.

BLUE STAR areas. After random selection of 48 upazilas, list of NGMPs of these upazilas were collected from SMC for smooth implementation and maintain accuracy of data collection process.

1.9.6 Sample Size

Sample size both for providers and community people have shown in the following Table. Since SMC has started training program on TB for the BS providers in Barisal so study did not collect any information from the BS providers in this division.

Sample distribution of the study

Divisions	Providers sample					Community sample				
	Urban		Rural		Total	Urban		Rural		Total
	BS	Non-BS	BS	Non-BS		Male	Female	Male	Female	
Barisal	0	17	0	34	**51**	51	51	98	102	**302**
Chittagong	18	14	40	38	**110**	42	38	106	115	**301**
Dhaka	39	28	33	23	**123**	89	95	78	70	**332**
Khulna	16	14	42	35	**107**	43	45	106	106	**300**
Rajshahi	19	14	42	33	**108**	42	33	108	117	**300**
Sylhet	27	23	28	29	**107**	61	67	90	82	**300**
Total	**119**	**110**	**185**	**192**	**606**	**328**	**329**	**586**	**592**	**1835**

FINDINGS FROM NON-GRADUATE MEDICAL PRACTITIONERS (NGMPs)

CHAPTER TWO

2.1 BACKGROUND

2.1.1 Background information of respondents

Study shows that there was no significant differences among the providers of urban and rural areas but differences were found among BS and non-BS providers. The mean age of the BS providers was 43 years while it was 38 years for the non-BS providers. Irrespective of type of providers and their residence, majority respondents (40%) had HSC/Alim/Diploma level education followed by SSC/Dhakhil 30 percent and BA/BCom./BSc./Fazil 23 percent. Minimum educational attainment for BS and non-BS providers remained same (2%). Overall, there is no significant difference among the BS and non-BS providers education level.

Table 1: Background characteristics of the NGMP providers

Characteristics	Type of providers		Area		All
	BS	Non-BS	Urban	Rural	
Age (in years)					
Below 25	1	6	2	3	3
25-29	5	19	8	14	12
30-34	11	16	14	13	14
35-39	22	20	25	19	21
40 or above	62	39	50	51	51
Mean age	43	38	41	41	41
Education of respondents					
Class 5-10	2	2	1	2	2
SSC/Dhakhil	29	32	28	31	30
HSC/Alim/Diploma	43	36	35	43	40
BA/BCom./BSc./Fazil	22	24	28	20	23
MA/MCom./MSc./Kamil/Title	5	6	7	4	5
Professional qualification					
RMP	37	29	29	35	33
LMF	28	36	35	30	32
Diploma in Pharmacy/Medicine/ DHMS/DMF/DUMS/SMF	31	24	31	25	27
Rural Doctor	25	17	16	24	21
Paramedics/SACMO	8	6	11	5	7
Medical Assistant	6	4	7	4	5
No education/training/degree	1	6	4	3	3
Others (Nursing/BS training)	2	1	2	1	2
N	**304**	**302**	**229**	**377**	**606**

Study also explores the professional qualification of the respondents. Among the BS providers 37 percent were RMP and 28 percent were LMF. Table 1 shows that RMP qualified professionals are more than LMF in rural areas. The other professionals were diploma in pharmacy/medicine/DHMS/ DMF/DUMS/SMF 31 percent, rural doctor 25 percent, paramedics/SACMO 8 percent, and medical assistant 6 percent. On the other hand, among the non-BS providers RMP, LMF, diploma in pharmacy

/medicine/DHMS/DMF/DUMS/SMF, rural doctor, paramedics/ SACMO, and medical assistant were found 29, 36, 24, 17, 6, and 4 percent respectively. Professionals having no education/training/degree were found more among non-BS providers than BS providers (6% vs. 1%).

2.1.2 Information about NGMP outlet and available services

Table 2 describes the information about both BS and non-BS outlets in urban and rural settings. About 94 percent of the providers of both BS and non-BS outlets are owners of the outlets and BS providers have six years of association with the BS network. The professional duration was higher for BS providers than non-BS providers (BS 19 years vs. non-BS 13 years). On an average 34 percent clients visit BS outlets per day while it is 25 percent for the non-BS outlets. Among them 14 percent and 9 percent females visit BS and non-BS outlets respectively. On the other hand, there is no significant variation by average number of clients per day according to urban and rural areas.

Table 2: Information about NGMP outlets and available services

Issues	Type of providers		Area		All
	BS	Non-BS	Urban	Rural	
Alliance with BS network (yrs.)	6	0	6	6	6
Average professional duration (yrs.)	19	13	16	17	16
Average client visit per day	34	25	29	31	30
Male	10	9	9	10	10
Female	14	9	12	12	12
Children	10	7	8	9	8
Ownership of outlet	96	93	96	93	94
Available services at outlet					
General curative care	94	97	94	97	96
Sale medicines	80	86	83	83	83
Child care	80	69	71	77	75
FP services	92	37	62	66	65
Provide prescription	74	54	63	65	64
BP measure	64	54	58	60	59
Pregnancy care	47	25	30	39	36
Weight measure	41	18	33	27	29
Delivery care	35	18	21	29	26
N	**304**	**302**	**229**	**377**	**606**

The study shows that almost all outlets (both BS and non-BS) provide general curative care to the client which is 96 percent. There is no significant differences among BS and non-BS outlets in terms of selling medicines rather same in urban and rural settings. On the other hand, differences are found in providing child care, pregnancy care, and delivery care services which are nearly double for BS outlets than that of non-BS outlets (see table 2). It is found that FP services varied noticeably between BS and non-BS outlet which is 92 percent and 37 percent respectively. This situation demonstrates that clients are more authentic in receiving FP services from BS providers than non-BS providers.

2.1.3 Monthly income of providers through outlet

The average monthly income of providers through outlets is highest in Dhaka division and lowest in Khulna division which is 18,891 taka and 8,977 taka respectively followed by Chittagong 12,988 taka, Sylhet 12,450 taka, Barisal 9,070 taka and Rajshahi 9,030 taka. The providers of BS outlets earn more than non-BS outlets as a whole (14,669 taka and 10,011 taka respectively). Also there exists urban-rural differences (see graph 1). It can be deduced that BS outlets have more interaction with clients than non-BS outlets.

Graph 1: Average monthly income of outlets by divisions, types of providers and areas

2.1.4 Observation findings of NGMP outlets

In order to measure the readiness of the outlets to provide services observation techniques was adopted. Table 3 depicts a clear view about the physical infrastructure of the outlets that almost all center have electricity facility both in urban and rural areas and both BS and non-BS outlets. Same result was found in terms of cleanliness. Eighty six percent of both BS and non-BS outlets were found neat and clean during observation. Though the other facilities are not universal, it is nearly same in urban and rural areas and noticeably varied between BS and non-BS outlets. It is found that 75 and 66 percent of BS and non-BS outlets respectively had water facility. The difference was profound in terms of visual and audio privacy, waiting space for clients, separate sitting arrangement, observation beds between the BS and non-BS outlets. Table 3 shows that 76 percent BS outlets had visual privacy while 58 percent non-BS outlets had so. Again, 67 percent BS and 51 percent of non-BS outlets maintained audio privacy. On the other hand, 48 percent non-BS outlets had separate sitting arrangement for the clients while it was 71 for BS outlets. Suitable waiting space for the clients was also varied which is 74 and 55 percent respectively for BS and non-BS outlets. Also there was difference in availability of observation bed (BS 86% vs. non-BS 65%).

Table 3: Observation findings of NGMP outlets

Observation issues	Type of providers		Area		All
	BS	Non-BS	Urban	Rural	
Electricity facility	99	96	98	97	98
Water facility	75	66	69	72	71
Visual privacy is maintained	76	58	68	66	67
Audible privacy is maintained	67	51	58	60	59
Suitable waiting space for clients	74	55	67	63	65
Neat and clean environment	86	86	87	86	86
Observation bed is available	86	65	77	75	76
Separate sitting arrangement for clients	71	48	62	57	59
N	**304**	**302**	**229**	**377**	**606**

2.2 KNOWLEDGE ON TB

2.2.1 Knowledge regarding reasons for infecting with TB disease

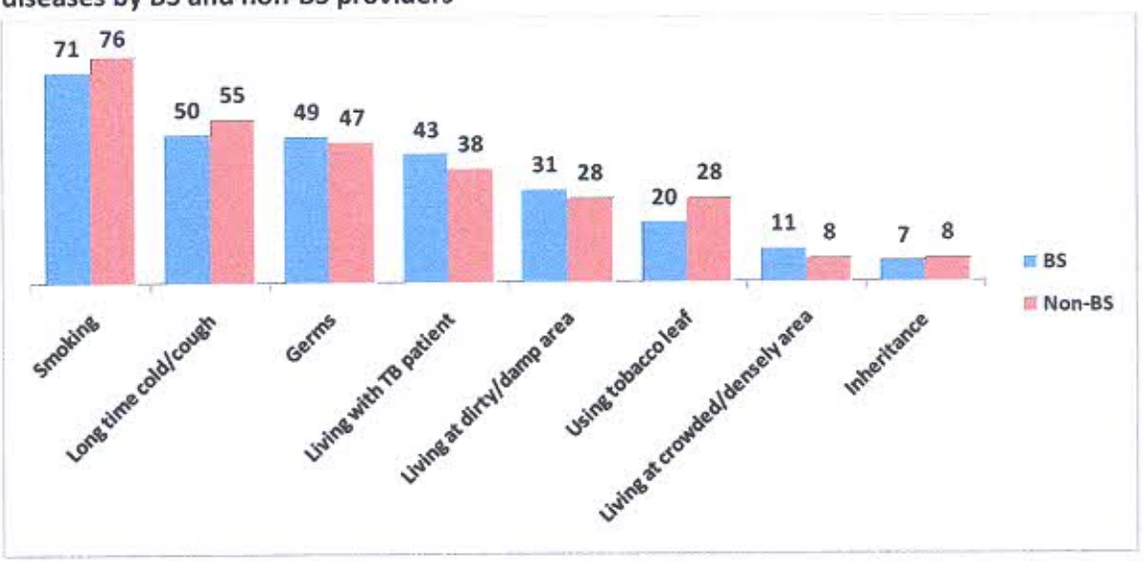
The following Table shows knowledge of respondents regarding reasons of infecting with TB diseases. It is found that about three-fourth of them reported smoking as a top most reason which cause TB. Suffering from cold/cough for longer period is another factor of infecting with TB was reported by more than half of the respondents. Other two significant reasons were germs (48%) and living with TB patient (41%). About one-fourth of the respondents had knowledge that using tobacco leaf or living at crowded/densely area are the reasons which is responsible for infecting with TB diseases. Some of the respondents also reported other reasons which have been shown in the following Table. Observation across the divisions revealed that the proportion of responses in Sylhet division, such as "long time cold or cough/germs/living at dirty/damp area" are comparatively lower than other divisions and national average.

Table 4: Distribution of knowledge regarding reasons for infecting with TB diseases by divisions

Reasons	Divisions						All
	Barisal	Ctg.	Dhaka	Khulna	Raj.	Sylhet	
Smoking	88	73	64	69	73	82	73
Long time cold/cough	37	56	55	67	64	27	53
Germs	49	33	47	57	62	42	48
Living with TB patient	45	56	30	38	44	35	41
Living at dirty/damp area	26	39	29	34	29	16	29
Using tobacco leaf *(sada pata/jorda)*	57	18	18	17	14	37	24
Living at crowded/densely area	24	13	12	8	4	3	9
Inheritance	10	12	2	6	9	8	8
Long working at nicotine/cigarette factory	4	11	5	3	7	2	5
Lack of nutritious food	0	6	1	3	5	5	4
Dust from jute mills	10	2	6	4	5	3	4
Drinking alcohol	6	7	5	4	2	3	4
Transmission of TB infected blood	8	1	0	0	2	1	1
N	**51**	**110**	**123**	**107**	**108**	**107**	**606**

Similar findings are observed when looking into BS and Non-BS providers' knowledge regarding reasons for infecting with TB diseases. Graph 2 indicates that there are no noticeable differences of different responses between BS and Non-BS providers except using tobacco leaf (BS 20% vs. non-BS 28%). It is observed from the following graph that all of the responses are higher for BS providers as compared to non-BS providers except smoking (BS 71% vs. non-BS 76%) and long time cold/cough (BS 50% vs. non-BS 55%). However, about one out of ten BS and non-BS providers reported inheritance as a reason of infecting with TB.

Graph 2: Comparison of providers' knowledge regarding reasons for infecting with TB diseases by BS and non-BS providers



N (BS=304, Non-BS=302)

2.2.2 Knowledge regarding modes of TB disease transmission

Present study intended to assess the knowledge of providers regarding modes of TB disease transmission, which may provide a platform to control TB diseases by the non-graduate providers in future. Majority of the providers (89%) reported TB patient's cough/sneeze is the main mode of TB transmission followed by breathing of TB patient (52%), share utensils of TB patients (49%) and share bed/clothes of infected person (34%). However, misconceptions still persist among some of the providers such as blood transfusion is a mode of TB transmission. Findings did not notice any significant differences among the different modes of transmission between BS and non-BS providers as well as by their residence. Since many providers do not have higher knowledge of all possible modes of TB transmission, so there is an opportunity to improve their knowledge for disseminating prevention ways in the community.

Table 5: Distribution of knowledge regarding mode of TB disease transmission

Way of transmission	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhaka	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
TB patient's cough/sneeze	96	96	82	94	89	84	90	89	90	89	89
Breathing of TB patient	71	67	49	26	50	57	50	54	55	50	52
Share utensils of TB patient	90	63	34	51	49	30	48	49	43	52	49
Share bed/cloths of TB patient	86	36	29	23	41	19	30	39	35	34	34
Blood transfusion	2	6	7	12	4	3	8	4	4	7	6
Germs/dusts	6	2	2	1	3	1	1	3	2	2	2
Others	4	2	3	3	3	1	3	1	2	2	2
Don't know	0	0	3	1	3	4	2	2	1	2	2
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**

2.2.3 Knowledge regarding symptoms of TB disease

All the providers knowledge on TB symptoms was assessed which has been shown in the following Table according to divisions, types of providers and their residence. Findings suggest that irrespective of divisions, types of providers and residence, 83 percent of respondents mentioned "cough for more than three weeks" as a symptom of TB diseases. Second highest symptom was "discharge blood with cough" (71%) which was slightly higher reported by the non-BS and rural providers as compared to BS and urban providers. Weight loss, mild fever at night, fever for longer period and loss of appetite were reported by 46, 41, 31 and 26 percent of providers. Not significant, yet it was found that there is some variation among the responses by the type of providers as well as by their residence.

Table 6: Distribution of knowledge regarding symptoms of TB disease

Symptoms	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhaka	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
Cough for more than 3 weeks	94	92	77	83	73	84	84	82	80	85	83
Discharge blood with cough	92	67	63	80	69	65	67	74	67	73	71
Weight loss	47	66	50	49	58	40	65	40	52	52	52
Mild fever at night	31	39	46	53	53	44	47	44	45	46	46
Fever for longer period	55	42	37	37	45	36	44	37	38	43	41
Loss of appetite	20	30	30	33	44	25	37	26	26	35	31
Chest pain	37	21	21	34	33	15	27	24	23	28	26
Cough for more than half week	0	1	0	8	5	0	2	3	1	3	2
Others	2	3	10	5	5	3	5	5	6	5	5
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**

2.2.4 Knowledge regarding preventive measures of TB disease

It is recognized and accepted all over the world that prevention is always better than cure. However different study finding of non-graduate medical practitioners revealed that there is lack of knowledge among the providers regarding preventive measure of TB diseases. Present study findings also reveal that there is knowledge gap among the providers. Only 68 percent of providers (BS 62% vs. non-BS 74%) had knowledge "avoid smoking" as a preventive measure of TB disease. Each "ensure health environment" and "keep safe from TB patient" was reported by about half of the respondents. Not too high, yet "avoid discharging cough/sneezing at public place", "vaccination" and "avoid tobacco leaf/nicotine" was reported by 39, 25 and 19 percent of respondents respectively. It is observed that there is no significant difference among the different responses between BS and non-BS providers as well as by their residence.

Table 7: Distribution of knowledge regarding preventive measures of TB disease

Preventive measures	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhk.	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
Avoid smoking	86	70	54	67	65	77	62	74	68	68	68
Ensure healthy environment	55	64	52	50	62	35	54	51	52	53	53
Keep safe from TB patient	57	57	39	43	52	61	51	51	48	52	51
Avoid discharging cough/sneezing at public place	55	50	33	60	36	9	40	38	39	39	39
Vaccination	24	18	27	37	19	24	28	22	21	28	25
Avoid tobacco leaf/nicotine	51	21	12	10	18	18	13	25	18	19	19
Avoid addiction & sharing syringe	6	10	1	10	7	3	7	5	4	7	6
Intake of balanced/quality food	0	1	1	2	5	1	3	1	1	2	2
Others	0	0	2	2	2	5	2	2	2	2	2
Don't know	0	7	6	0	3	0	4	2	4	3	3
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**

2.2.5 Knowledge regarding tests of TB diagnosis and duration of treatment

In response to requirement of TB diagnosis, all of the respondents emphasized it is prerequisite. Further knowledge on TB diagnosis test was explored and it was found that 97 percent of respondents reported cough test is appropriate for TB diagnosis irrespective of types of provider and their residence. In addition, two-third of them mentioned about blood test and about half stated X-ray test for detecting TB disease. Two percent of respondents had incorrect knowledge of TB diagnosis test. On the other hand, duration of TB treatment was asked to the respondents and it was found that majority of the respondents correctly spelled the duration of TB treatment. Divisional findings do not show any significant differences. Similarly, there is no significant difference among the different responses between BS and non-BS providers as well as by residence of providers about the diagnosis of TB tests.

Table 8: Respondents' knowledge regarding tests of TB diagnosis and duration of treatment

Reasons	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhk.	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
TB diagnosis is required	100	100	100	100	100	99	100	100	100	100	100
Test of TB diagnosis											
Cough test	100	97	93	99	98	95	97	97	97	97	97
Blood test	80	70	73	60	61	55	67	64	63	67	66
X-ray	31	76	44	38	42	51	59	38	47	49	48
Urine test	2	2	2	4	4	0	1	3	2	2	2
Others (Tuberclorosin/Bone /Monteux/Tissue/Skin test)	0	11	4	2	0	0	2	2	3	2	2
TB treatment duration (months)	6	8	7	6	7	6	7	6	7	7	7
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**

2.2.6 Knowledge regarding places of TB treatment

Government of Bangladesh is providing TB treatment free of cost through different government and NGO outlets. Since non-graduate medical practitioners had a good number of client coverage, so they had a better opportunity to provide referral services or provide relevant information to the clients regarding TB treatment facility. Survey findings reveal that majority respondents reported UHC (81%)

as a place of TB treatment followed by NGO clinic (60%) and specialized TB clinic (57%). Other reported places of TB treatment were HFWC (16%), district GoB hospital (12%), private clinic (9%), MBBS doctor (8%) and BS outlet was reported by 2 percent of BS providers. Findings reveal that there is no significant difference among the different responses by divisions, type of providers and their residence.

Table 9: Distribution of respondents reported places of TB treatment by divisions, type of providers and areas

Places	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhaka	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
Places of TB treatment											
UHC	84	83	78	90	84	66	79	82	63	91	81
NGO clinic	47	66	54	74	63	51	61	59	62	59	60
TB clinic	39	68	63	42	57	60	64	49	68	50	57
HFWC	35	18	24	9	8	8	13	18	14	16	16
District GoB hospital	8	16	5	8	13	21	14	10	17	9	12
Private clinic	8	7	15	8	11	6	10	9	12	7	9
MBBS doctor	10	8	13	4	9	6	9	8	11	7	8
BS outlet	0	1	2	2	0	1	2	0	2	1	1
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**

2.2.7 Knowledge regarding problems that may occur due to irregular use of TB medicines

About 98 percent of the respondents had knowledge that irregular use of TB medicines cause treatment problems. Those who stated problems among them 82 percent mentioned that patient will not be cured due to irregular use of medicines followed by 36 percent reported that irregular use of medicines may cause death of patients. Since irregular use of medicine does not cure disease, so 16 percent of them stated that TB germs will spread to others. Six percent of the respondents each claimed that patients need to repeat dose again and will grow resistance power in the body. Statistical analysis didn't notice any significant difference among the different responses by divisions, type of providers and their residence.

Table 10: Distribution of respondents reported problems may occur due to irregular use of TB medicines

Problems	Divisions						Providers		Areas		All
	Barisal	Ctg.	Dhk.	Khulna	Raj.	Sylhet	BS	Non-BS	Urban	Rural	
Irregular medicine use cause problem	100	100	98	98	100	95	98	99	98	99	98
Types of problems											
Patient will not be cured	94	69	84	91	69	93	78	87	84	82	82
Patient may die	24	46	27	56	38	18	40	31	33	37	36
TB can spread to others	2	19	9	24	20	17	19	14	14	18	16
Need to repeat dose again	0	7	5	5	15	0	6	6	5	7	6
Cause resistance power/deteriorate health	0	19	3	3	5	1	5	6	4	7	6
Others (Cause cancer/Kidney damage/weakness)	0	7	3	0	2	0	2	1	1	4	2
N	**51**	**110**	**121**	**105**	**108**	**102**	**298**	**299**	**224**	**373**	**594**

2.2.8 Knowledge regarding TB DOTS

Bangladesh's National TB Control Program (NTP) began implementing Directly Observed Therapy, Short-Course (DOTS) in 1993 through some selected government and NGO outlets. Yet, there is a great scope to involve non-graduate medical practitioners for providing TB DOTS services due to their potentiality in the market. Findings revealed that 30 percent of the respondents had knowledge of using TB medicine regularly. However, only 15 percent of the respondents reported that they had heard about TB DOTS which is quite low. It may occur due to non acquaintance with the term of TB DOTS by the providers.

In response to correct knowledge of TB DOTS, almost all the respondents know the correct implication of TB DOTS (among those who were aware about TB DOTS). Respondents were asked to know the benefits of TB DOTS and findings reveal that 86 percent of them mentioned TB DOTS ensure proper treatment. About half of the respondents stated that patient can be easily followed up and this response varies according to the divisions (ranges from 0% to 88%), type of providers (BS 38% vs. Non-BS 70%) and their residence (Urban 70% vs. Rural 34%). TB DOTS ensure effectiveness of medicines and this procedure does not provide any opportunity to miss medicines was reported by 23 and 2 percent of the respondents respectively.

Regarding the available facility of TB DOTS services, respondents mostly stated NGO clinic (57%) followed by UHC (54%). In addition to NGO clinic and UHC, 13 percent reported about HFWC and 8 percent about TB clinic. Other lowest reported TB DOTS service facilities were health/NGO workers and medical college/hospital.

About universally (98%) respondents are aware that TB can be fully treated under certain conditions. The highest reported condition was use full course of medicines (92%) followed by ensure timely testing cough/blood and starting treatment timely (48%). Eating nutritious/balanced food/ vegetables/fruits was also reported by the 4 percent of the respondents. Other 7 percent responses include ensuring healthy environment, obeying advices of service providers, avoiding smoking, vaccinations and DOTS services.

Table 11: Respondents' knowledge regarding TB DOTS

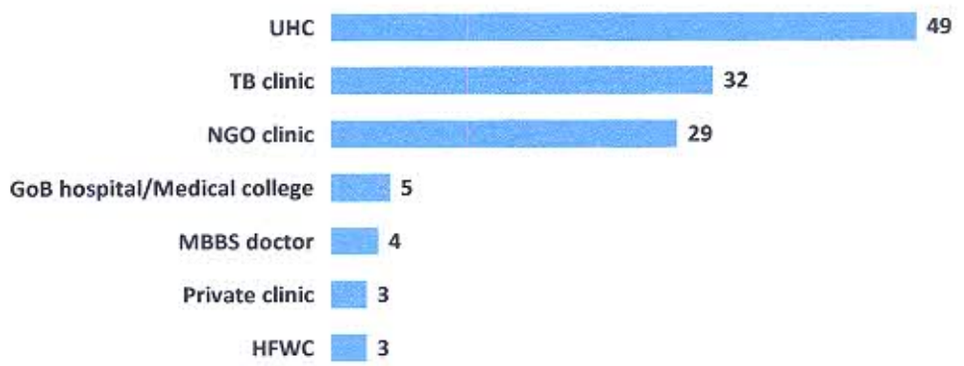
Responses	Divisions						Providers		Areas		All
	Bar.	Ctg.	Dhk.	Khul.	Raj.	Syl.	BS	Non-BS	Urban	Rural	
Know method of ensuring regular use of medicine on TB	18	26	39	36	41	13	37	23	29	30	30
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**
Heard about TB DOTS	8	16	20	8	28	6	20	11	14	16	15
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**
Correctly knows about TB DOTS	100	100	100	89	100	100	98	100	100	98	99
Benefits of TB DOTS											
Ensure proper treatment	100	89	76	78	93	83	85	88	85	86	86
Patient can be easily followed up	0	72	88	11	7	83	52	38	70	34	47
Ensure effectiveness of medicine	25	17	28	33	17	33	22	25	18	25	23
No opportunity to miss medicine	0	6	0	11	0	0	2	3	0	3	2
N	**4**	**18**	**25**	**9**	**30**	**6**	**61**	**33**	**32**	**60**	**91**
Availability of TB DOTS facility in the locality											
NGO clinic	50	72	64	56	33	100	58	53	73	48	57
UHC	75	56	28	89	73	0	53	56	30	68	54
HFWC	25	17	12	11	13	0	13	13	15	12	13
TB clinics	0	11	0	0	17	0	10	3	3	10	8
Health/NGO workers	0	6	4	0	3	0	2	6	3	3	3
Medical college hospital/Private hospital	0	6	4	0	3	0	3	3	6	2	3
Don't know	0	0	8	0	0	0	3	0	0	3	2
N	**4**	**18**	**25**	**9**	**30**	**6**	**61**	**33**	**32**	**60**	**91**
Perceive that TB can be fully treated	94	99	98	98	98	96	98	97	97	98	98
N	**51**	**110**	**123**	**107**	**108**	**107**	**304**	**302**	**229**	**377**	**606**
Necessary steps to be fully cured											
Timely test cough/blood and treatment	33	50	38	63	57	44	52	45	41	53	48
Intake full course of medicines	98	96	88	96	83	94	91	93	94	91	92
Eating nutritious/balanced food/ vegetables/fruits	4	10	3	5	4	1	5	4	3	5	4
Others*	5	15	11	3	4	4	7	6	7	7	7
N	**48**	**109**	**121**	**105**	**106**	**103**	**298**	**293**	**222**	**369**	**594**

*Ensure healthy environment/ Obey advices of service providers/Avoid smoking /Vaccinations/DOTS services

2.2.9 Knowledge of TB referral places

Majority respondents reported UHC as referral place for TB treatment (49%) followed by TB clinic (32%) and NGO clinic (29%). Other reported places for referral services were government hsame 2 uospital/medical college (5%), MBBS doctor (4%), private clinic (3%) and HFWC (3%).

Graph 3: Referral places for TB treatment



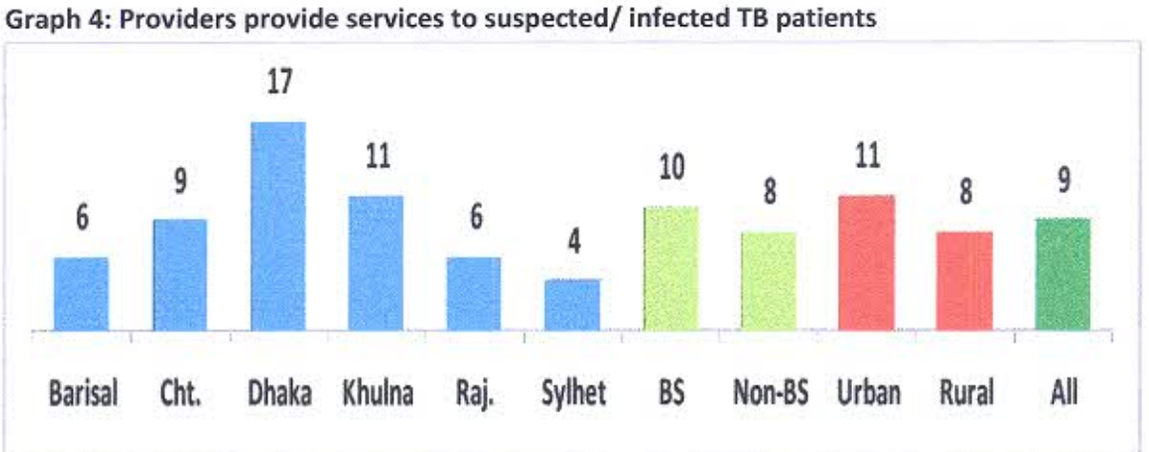
N=606

2.3 PRACTICES OF TB SERVICES

2.3.1 TB services provided by the providers

The following graph represents the proportion of providers who currently provide TB services by divisions, type of providers and their residence. Findings reveal that 17 percent of respondents in Dhaka division currently providing TB services whereas only 3 percent of providers in Khulna and Sylhet each are providing TB services. Nine percent providers in Chittagong and 6 percent in Barisal and Rajshahi is current providing TB services each. Similarly, we see that 9 percent of BS providers are currently providing TB services and this proportion is 7 percent for non-BS providers. There is also a gap between urban and rural providers (Urban 10% vs. Rural 7%). It is evident that nationally only 8 percent of providers are currently providing TB services which is quite poor. Findings also revealed that only 11 providers mentioned that currently patients are taking TB medicines under their supervision.

Graph 4: Providers provide services to suspected/ infected TB patients

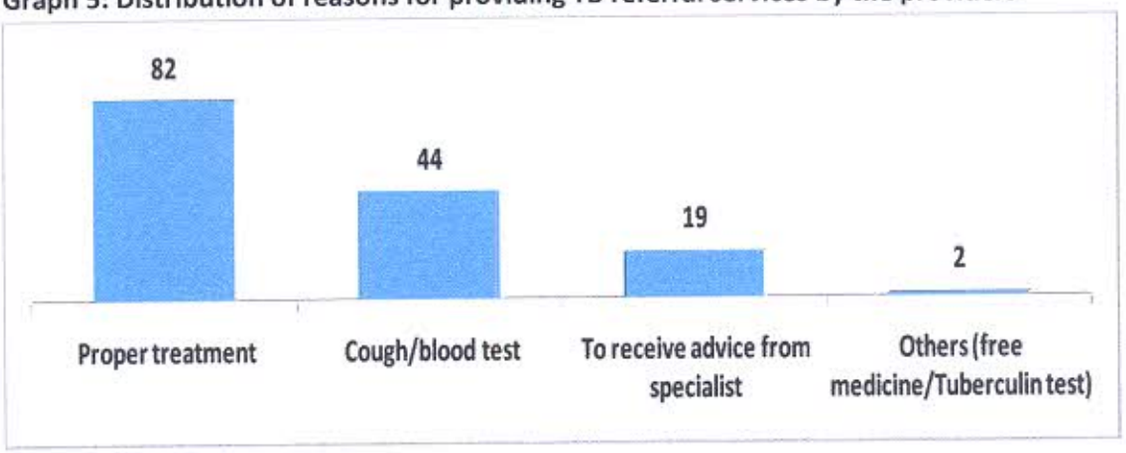


N=586

2.3.2 Reasons for TB referral services

The respondents who provide TB services among them almost all of them basically providing referral services as they are lacking with necessary equipment or logistics to offer TB services to the clients. Graph 5 provides evidence why providers refer their clients to other facilities. Findings suggest that majority of the respondents refer their patients for proper treatment (82%) followed by testing cough/blood (44%), for receiving advice from specialist (19%) and other responses (2%) which includes for free medicine/Tuberculin test.

Graph 5: Distribution of reasons for providing TB referral services by the providers

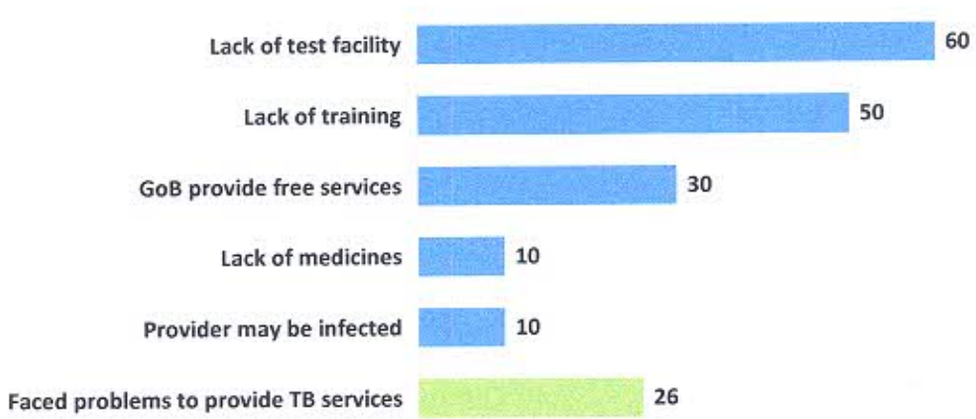


N=586

2.3.3 Providers reported problems to provide TB services

The respondents who provide TB services among them more than one-fourth reported that they faced different problems to provide TB services to the patients. Lack of testing facility was reported by the 60 percent of the providers followed by training on TB services (50%). Thirty percent of them stated that GoB is providing free services. Lack of medicine for treating TB patients was also reported by 10 percent of the providers. However, one important alarming statement is that provider may be infected through TB patient and which was reported by 10 percent of the providers.

Graph 6: Percentage of providers experienced problems to provide TB services

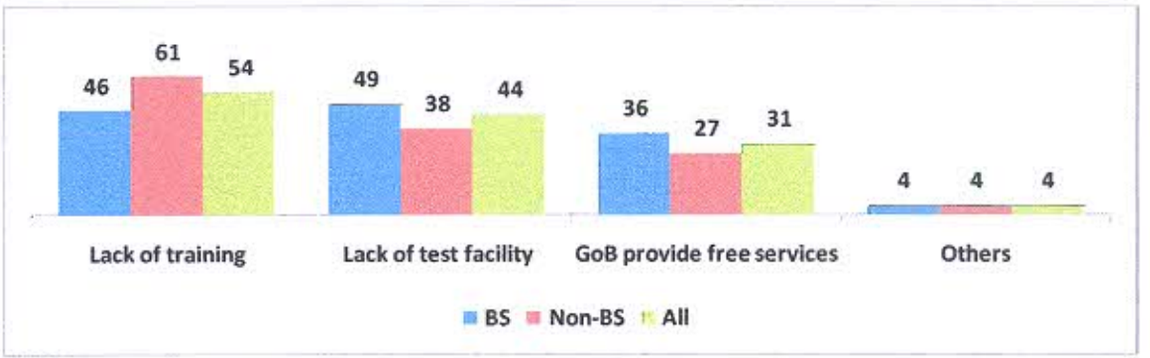


N=54

2.3.4 Reasons for not providing TB services

Findings revealed that majority of the survey providers (91%) do not provide TB services. So possible reasons were explored in the survey and it is evident that lack of training on TB services, lack of testing facility to diagnose suspected TB cases and opportunity to avail free services by the GoB facilities discouraging them to offer TB services. Lack of training was claimed by 46 percent of BS and 61 percent of non-BS providers. However, quite higher proportion of BS providers claimed lack of facilities for testing TB suspected patient as compared to non-BS providers (BS 49% vs. non-BS 38%). In addition to these reasons, slightly higher proportion of BS providers as compared to non-BS providers (BS 36% vs. non-BS 31%) stated that they are not providing TB services as currently GoB is providing free services to the TB patients.

Graph 7: Reasons for not providing TB services

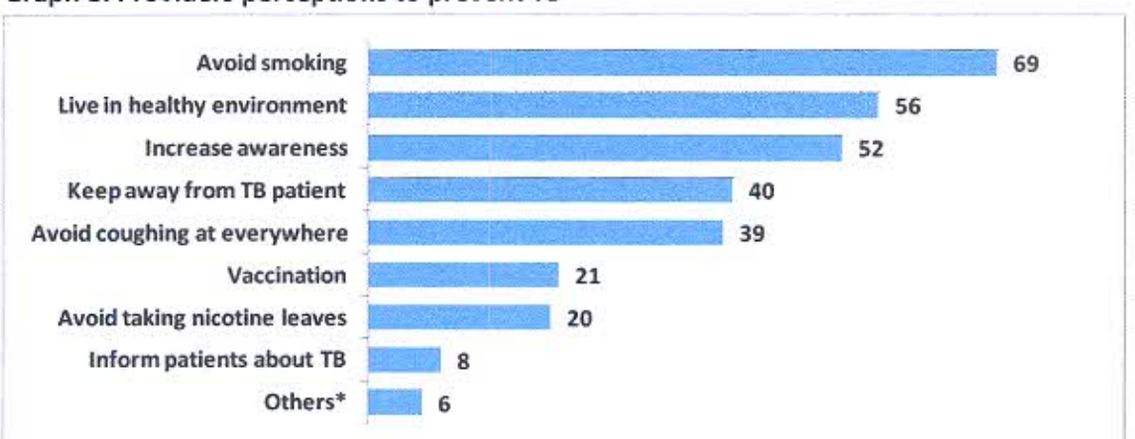


N=532

2.3.5 Providers' perceptions regarding prevention ways of TB disease

All the providers' perceptions were recorded in the survey to know the prevention ways of TB diseases. Findings revealed that majority of them stated avoiding smoking (69%) followed by living healthy environment (56%) and increase awareness among people (52%) can help to prevent TB. On the other hand, keep away from TB patients and avoid coughing at every place, each was suggested by 40 percent of the respondents. Two other important issues like vaccination and avoid nicotine leaves *(sada pata/ jorda)*; each was reported only by one-fifth of the respondents.

Graph 8: Providers perceptions to prevent TB



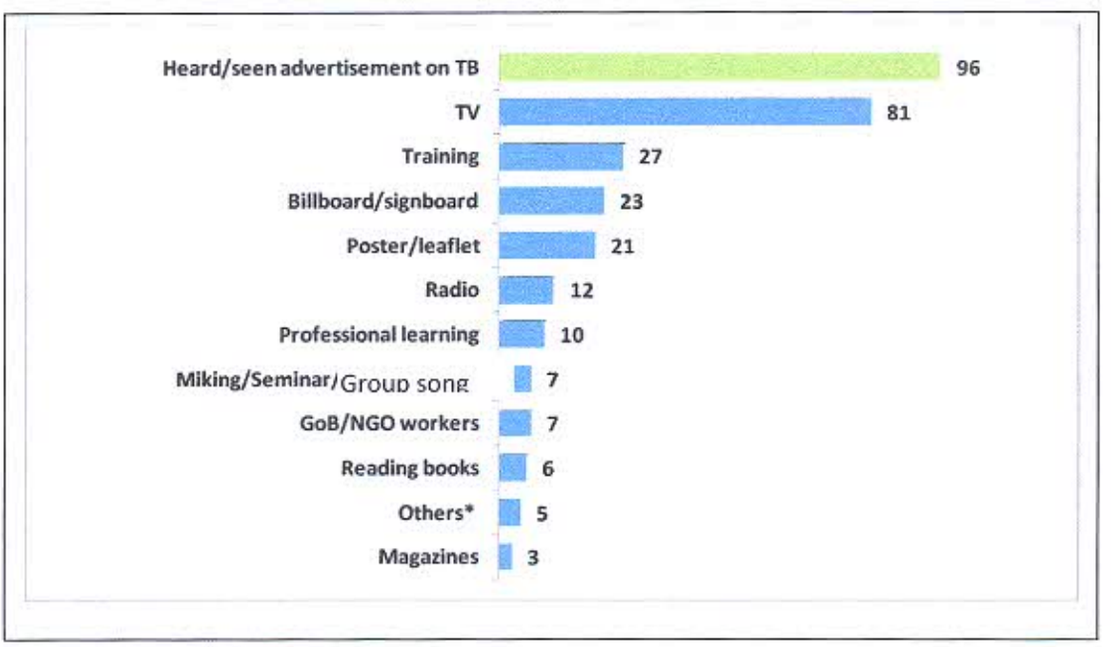
*** Having nutritious food and drinking pure water/ Avoiding addiction of nicotine and narcotic/ Using musk to avoid dusk/TB germ/ Proper treatment of TB patient/ Avoid ice cream/cold drinks/ Awareness program/ It should be taught at school/college/ Avoid dirty foods/ Don't know/Can't say**

2.4 MEDIA EXPOSURE AND PROVIDERS WILLINGNESS TO PROVIDE TB TREATMENT

2.4.1 Media exposure of respondents

All the providers were asked to know if they ever heard or seen any advertisement about TB. Ninety six percent of the respondents stated that they have heard or seen advertisement on TB where television is fur the most important source of their heard or seen advertisement. Eighty one percent of the respondent's ever heard or seen advertisement regarding TB from television. Other important sources which range from 27 to 21 percent were training, billboard/signboard, and poster/leaflet. In addition to these sources they have stated some other insignificant sources which have presented in the following figure.

Graph 9: Respondents media exposure on TB



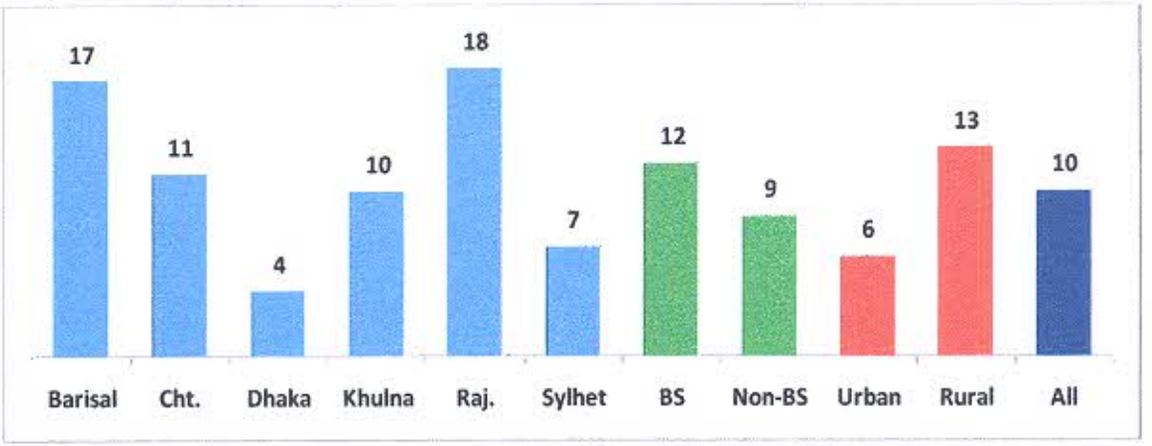
*** MBBS doctor/Mobile films/TB patient/Hospital/SMC; N=580**

2.4.2 Proportion of providers received TB related training

Those who have heard about preventive measure and treatment about TB (27%), they were asked to know the name of the agencies which have provided the training. Findings revealed that mostly they have received training from BRAC (41%) followed by UHC (37%), NGO (5%) and GoB hospital (4%). On average the duration of the training was 2 days.

In general, findings revealed that 10 percent of the providers stated that they received training where 12 percent were BS and 9 percent were non-BS providers. On the other hand, 13 percent rural providers reported that they received training on TB as compared to only 6 percent of urban providers. It was also found that mostly they have received training from BRAC (54%) followed by UHC (19%) and NGO (19%). On average the duration of the training was 2 days. However, rest of the providers were also asked to know either they have received any training on TB. According to their response, on average the duration of the training was only one day.

Graph 10: Proportion of respondents received TB related training

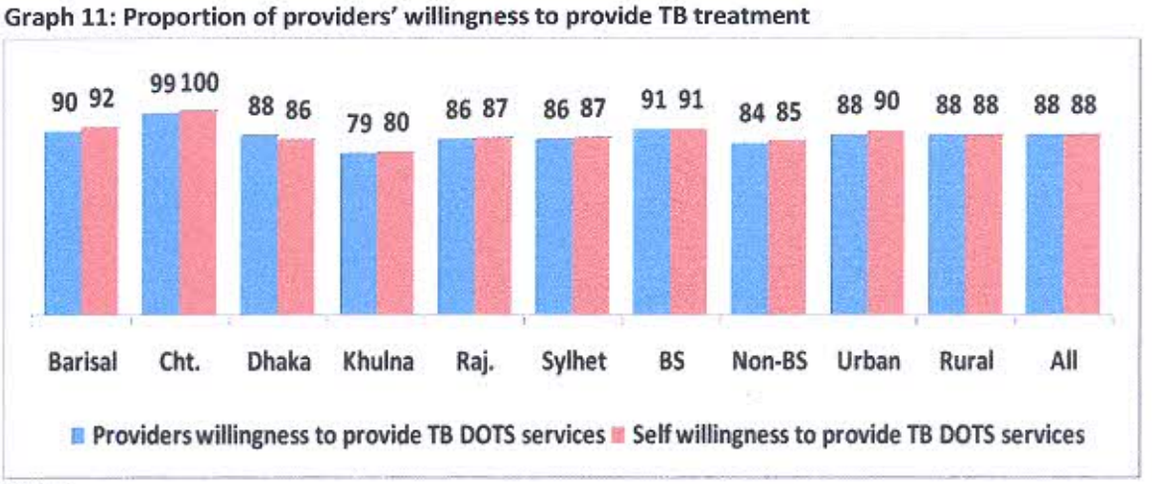


N=606

2.4.3 Providers' willingness to provide TB treatment/services

One of the important aspects of the survey was to know the perception of all the providers' interest to provide TB treatment as well as their own intention to provide TB treatment. Findings revealed that about 9 out of 10 respondents mentioned that the providers will be interested to provide TB treatment. Similarly same proportion of providers reported that they themselves are willing to provide TB treatment.

Graph 11: Proportion of providers' willingness to provide TB treatment



N=606

2.4.4 Providers' unwillingness to provide TB treatment/services

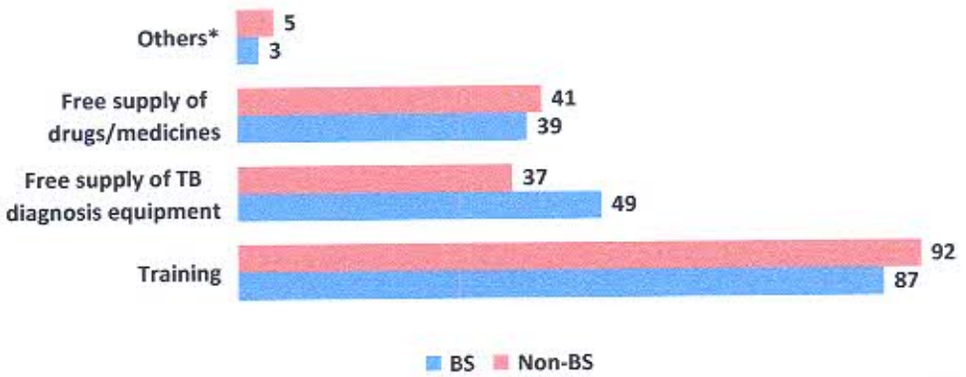
Among the 12 percent of respondents who were unwilling to provide TB treatment, mostly they stated time constraint (49%) followed by hospital nearby (19%) and lack of training (18%). Lack of faith to provider, TB patient never visit, patient may be irritated due to side-effects and lack of equipments and medicines are also reported by 11, 10, 8 and 8 percent respectively.

2.4.5 Supports seeking to provide TB DOTS services by the providers

In Bangladesh, there are a large number of non-graduate medical practitioners who are currently managing huge number of clients per day. Due to considering the prevalence of TB diseases and lack of available public service providers at health facility, this target group of providers can be utilized to expand coverage of TB services for increasing the success rate of TB treatment. In this point of view,

92 percent of BS and 87 percent of non-BS providers emphasized for organizing training program on TB followed by free supply of TB diagnosis equipment (BS 49% vs. non-BS 37%) and free supply of drugs and medicines (BS 39% vs. non-BS 41%).

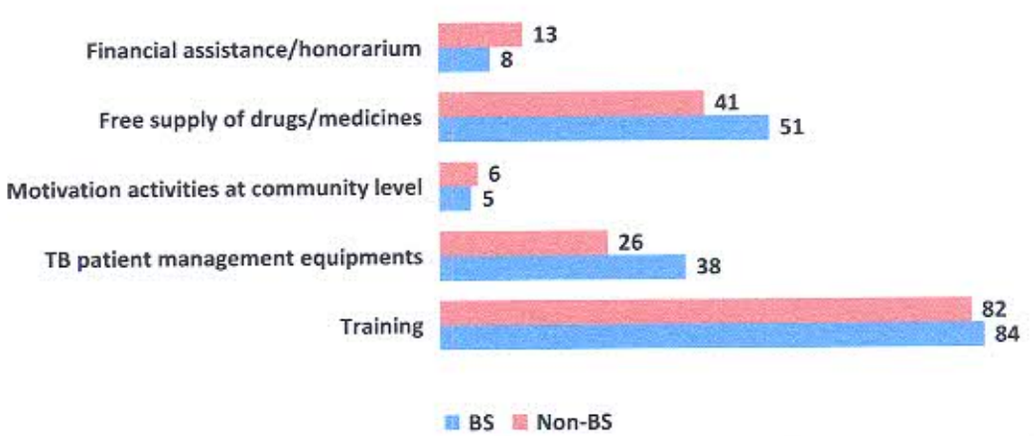
Graph 12: Providers seeking supports to provide TB DOTS services



*** Financial assistance/honorarium, People must know that the service is available here, Separate room; N=536**

On the other hand, since SMC had special interest to gather information from the non-graduate medical practitioners about the supports they are seeking from SMC, so they were requested to mention the list of support. In response to the question, majority of the providers (BS 84% vs. non-BS 82%) sought for arranging training on TB from SMC. In addition to training, the providers also emphasized TB patient management equipments (BS 38% vs. non-BS 26%) and ensuring free supply of drugs and medicines (BS 51% vs. non-BS 41%). Supporting through financial assistance/ honorarium by the SMC was stated by 8 percent of BS and 13 percent of non-BS providers. On the other hand, instead of direct support about 6 percent of providers requested motivational activities at community level by the SMC for providing TB treatment. Since this is a multiple response, so a holistic approach of a combination of these supports would be a great opportunity to ensure their involvement in providing TB services or treatment.

Graph 13: Providers seeking supports from SMC to provide TB DOTS services



*** Don't require any assistance, Wants to be a member BS network, Separate room, Gift items (Cap, pad, t-shirt, motor-cycle); N=536**

FINDINGS FROM COMMUNITY PEOPLE

CHAPTER THREE

3.1 BACKGROUND

3.1.1 Background information of respondents

Study shows that there is no significant difference regarding the age of respondents by division, sex and areas. The mean age of the respondents was 32 years where the age of male respondents was 33 years and the female was 31 years. Regarding the educational attainment, there is no significant variation by divisions. Findings reveal that majority completed primary education (60%), 11 percent didn't complete primary education (less than 1 percent were illiterate), 16 percent completed SSC education, 9 percent HSC and only 4 percent completed higher education. Regarding the marital status of the respondents, findings reveal that about three-fourth of them were currently married and one-fifth were unmarried. There was no noticeable difference regarding the marital status of the respondents by divisions and areas. However, it was found that 31 percent of the male respondents were unmarried and this proportion was 20 percent for female. The average monthly income of the family was around Taka 8400 per month where urban family income was Taka around 9000 and rural 8000. It is also found that monthly income was higher in Dhaka division (Taka 10607) and lower in Rajshahi division (Taka 6156) as compared to other division.

Table 12: Background characteristics of the respondents

Characteristics	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khul.	Raj.	Syl.	Male	Female	Urban	Rural	
Age (in years)											
Below 25	31	31	29	30	30	31	30	30	30	30	30
25-29	19	17	18	16	19	16	17	18	18	18	18
30-34	14	14	15	18	15	16	15	15	15	15	15
35-39	14	18	16	15	18	18	15	18	16	17	17
40 or above	23	21	23	21	18	20	24	18	21	21	21
Mean age	32	31	33	32	31	31	33	31	32	32	32
Education of respondents											
Incomplete primary	6	13	12	16	13	11	10	13	11	12	11
Complete primary	56	66	56	53	60	67	57	62	60	59	60
SSC/Dhakhil	22	12	17	15	16	11	18	13	14	17	16
HSC/Alim/Diploma	10	8	12	10	8	8	10	9	11	9	9
BA/BCom./BSc./Fazil/ MA/ MCom./MSc./Kamil	7	1	4	6	4	3	5	3	5	4	4
Marital status of respondents											
Currently married	78	71	81	76	81	66	68	83	76	76	76
Unmarried	19	22	17	21	16	27	31	10	21	20	20
Widowed	3	6	2	1	2	7	1	6	2	4	4
Separated/divorced	0	1	1	1	1	0	0	1	1	0	1
Monthly family income	8800	8779	10607	7086	6156	8559	8166	8569	9079	7971	8368
N	**302**	**301**	**332**	**300**	**300**	**300**	**914**	**921**	**657**	**1178**	**1835**

Study also explored the occupation of the respondents. In general irrespective of sex of the respondents, findings reveal that 41 percent were housewife followed by business (22%). Other occupations were service, skilled labor, agriculture/agriculture labor, day labor, student, and rickshaw/van drive. Almost similar proportion of current occupations was observed among the couples. However, observing occupation by sex it is found that majority of female respondents were housewife (82%) followed by student (6%) and agriculture/agriculture labor (4%). On the other hand, 42 percent of male respondents' occupation was business followed by agriculture/agriculture labor (13%) and service (11%).

Table 13: Occupation of the respondents by divisions, sex and areas

Occupations	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khul.	Raj.	Syl.	Male	Female	Urban	Rural	
Occupation of respondents											
Housewife	40	44	40	38	44	42	0	82	39	42	41
Business	20	24	18	22	26	23	42	2	22	22	22
Service	9	4	15	9	5	4	11	4	10	7	8
Skilled worker	2	5	3	0	5	4	6	0	3	3	3
Agriculture/agriculture labor	7	5	2	10	8	7	13	0	4	8	7
Day laborer	3	0	3	2	1	4	4	1	3	2	2
Student	9	5	5	10	7	6	8	6	8	7	7
Rickshaw/van driver	1	2	3	4	2	3	5	0	2	3	2
Unemployed	2	4	4	2	1	5	4	2	2	3	3
Others	5	7	6	2	2	1	5	2	7	3	3
N	**302**	**301**	**332**	**300**	**300**	**300**	**914**	**921**	**657**	**1178**	**1835**
Occupation of spouse											
Housewife	44	38	32	44	43	41	90	0	39	41	40
Business	24	18	24	19	17	22	2	36	21	20	21
Service	16	19	22	8	11	8	4	23	15	14	14
Skilled worker	4	5	5	5	3	6	1	8	5	4	5
Agriculture/agriculture labor	3	5	3	10	14	7	0	12	3	9	7
Day laborer	1	5	2	3	2	5	0	5	2	3	3
Garment worker	0	2	6	0	0	0	2	1	4	0	2
Driver	0	3	3	3	0	3	0	4	3	2	2
Rickshaw/van driver	3	3	1	6	6	3	0	6	3	4	4
Others	5	3	3	3	3	7	1	6	4	3	4
N*	**236**	**214**	**269**	**228**	**243**	**198**	**622**	**764**	**499**	**895**	**1395**

*N=Those who are married

3.1.2 Information about BS outlet and available services

Table 14 describes the information about BS outlets and available services sought by the providers by divisions, sex and urban-rural settings. About 19 percent of the respondents were aware that there was BS outlet in their locality and the awareness level was quite high among the male respondents (male 26% vs. female 11%). It was also found that comparatively lower proportion of respondents from Chittagong (10%) and Rajshahi (14%) were aware about BS outlet in their locality. Thirty seven percent of the respondents reported that there is no BS outlet and 44 percent mentioned that BS outlet may situate in their locality but they do not know about its existence. The average distance from respondents' home to BS outlet was less than 1 kilometer and more than half of the

respondents received services from the BS outlet according to those who were aware about the BS outlet. Mostly respondents visited BS outlet for receiving general curative care services (91%) followed by FP services (23%) and child care (13%). Further investigation shows that both male and female visited BS outlet mostly for general curative care, but the proportion of receiving FP services and child care were found higher by female respondents.

Table 14: Information about BS outlet and available services

Information about BS outlet	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khul.	Raj.	Syl.	Male	Female	Urban	Rural	
Have BS outlet in the respondents' locality											
Yes	23	10	27	20	14	17	26	11	17	19	19
No	23	50	30	27	67	27	40	35	36	38	37
Don't know	55	40	44	53	19	56	34	55	47	43	44
N	**302**	**301**	**332**	**300**	**300**	**300**	**914**	**921**	**657**	**1178**	**1835**
Average distance of BS outlet from home (In km)	0.8	0.8	0.7	0.5	0.9	0.9	0.8	0.7	0.7	0.7	0.8
Ever received treatment from near BS outlet	51	48	55	54	62	67	54	61	52	58	56
N	**69**	**31**	**87**	**59**	**42**	**49**	**240**	**97**	**113**	**224**	**337**
Name of received services											
General curative care	81	80	92	97	92	97	95	80	88	92	91
FP services	33	33	29	19	8	15	17	37	29	21	23
Pregnancy care	3	7	4	0	0	0	2	3	3	2	2
Delivery care	3	0	2	0	0	0	2	0	2	1	1
Child care	11	7	23	6	12	12	8	24	19	11	13
N	**35**	**15**	**48**	**32**	**26**	**33**	**130**	**59**	**59**	**130**	**189**

3.2 KNOWLEDGE ON TB

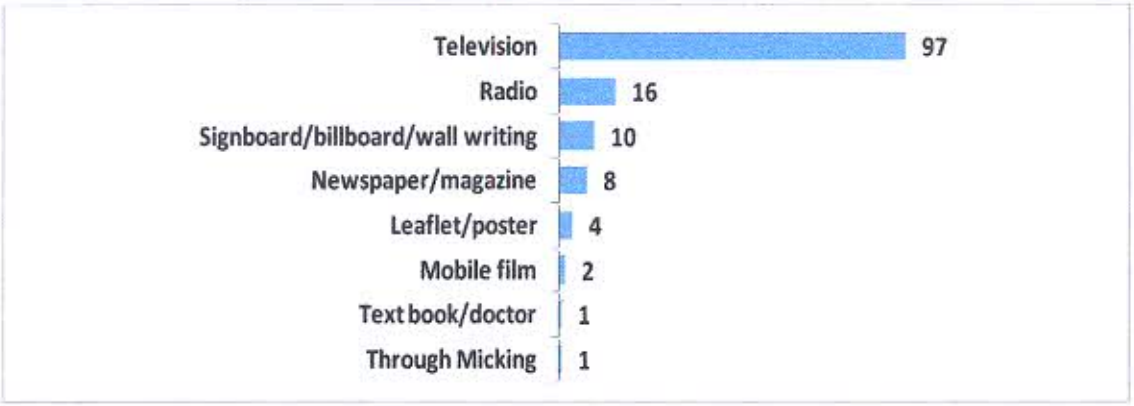
3.2.1 Awareness and sources of TB

Like other studies, present survey findings also found that awareness about TB was quite high. About cent percent of the respondents reported that they have heard about TB. They were further explored to know their sources of information. It was found that mass media (81%) was the highest reported source of information followed by neighbor/elite person (45%) and, NGO and GoB workers (17%). It is also evident that in addition to mass media and neighbors/elite person, both GoB and NGO workers are the important source of gathering TB information especially for the females (male 13% vs. female 20%). It was also found that workers had better contribution is some divisional areas like Barisal (28%), Khulna (19%) and Rajshahi (22%) as compared to other divisions such as Sylhet (7% only).

Pharmacy	-	-	-	-							
Seminar/Micking/Mobile film	1	1	2	1	4	1	1	2	1	2	2
Others (BS providers/FWV)	1	0	1	1	0	0	1	1	0	1	1
N	**297**	**299**	**330**	**298**	**293**	**296**	**909**	**907**	**650**	**1166**	**1816**

Since respondents emphasized that they have heard about TB disease mostly from the mass media, so further investigation was required to know more about the name of each media. Television was by far the most important media vehicle that was reported by 97 percent of the respondents (Graph 14). Other sources were radio (16%), signboard/billboard/wall painting (10%), newspaper/magazine (8%), leaflet/poster (4%) and mobile film/text book/announcement through mike. It was found that all type of media is important if we consider different segments of populations as our target groups for improving awareness about TB diseases.

Graph 14: Name of sources of media regarding knowledge on TB



N=1471

3.2.2 Knowledge regarding reasons for infecting with TB

The following Table shows knowledge of respondents regarding reasons of infecting with TB diseases. Findings revealed that overall 12 percent of the respondents (even slightly higher for female and rural respondents) did not know the reasons for infecting with TB diseases. It is found that 67 percent of them reported smoking as a top most reason which causes TB and this proportion was quite high among male as compared to female respondents (male 81% vs. female 52%). Suffering from cold/cough for longer period is another factor of infecting with TB was reported by 42 percent of the

respondents (male 34% vs. female 50%). Using tobacco leaf (*sada pata/jorda*) was reported by 25 percent of the respondents. Living with TB patient was reported by 15 percent and germs by 12 percent of respondents. Eight percent of the respondents had knowledge that living at dirty/damp area and living at crowded/densely were reported by 8 and 3 percent of respondents respectively as the reasons which is responsible for infecting with TB diseases. Observation across the divisions revealed that the proportion of responses for all divisions is near to national average.

Table 16: Distribution of knowledge regarding reasons for infecting with TB diseases

Reasons	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Smoking	69	73	63	52	67	77	81	52	67	66	67
Long time cold/cough	45	45	34	52	56	19	34	50	38	44	42
Using tobacco leaf *(sada pata/jorda)*	43	23	21	6	12	43	25	24	27	23	25
Living with TB patient	16	27	6	18	17	6	14	15	12	16	15
Germs	29	9	12	10	9	2	11	13	10	13	12
Living at dirty/damp area	4	16	7	4	6	7	10	6	9	7	8
Living crowded/densely area	5	6	4	2	1	3	5	2	4	3	3
Don't know	9	6	20	11	7	17	9	15	15	11	12
Others*	8	8	7	3	5	2	8	4	6	5	5
N	297	299	330	298	293	296	909	907	650	1166	1816

*Long working experience at tobacco related company/Dust from jute mill/ Drinking alcohol/Malnutrition/lack of nutritious food

3.2.3 Knowledge regarding modes of TB disease transmission

The knowledge of respondents regarding mode of TB disease transmission has been presented in the following Table. Overall, 82 percent of the respondents could report any modes of TB disease transmission and 18 percent could not mention any modes of transmission (see Table 17). Majority of the respondents (58%) reported TB patient's cough/sneeze is the main mode of TB transmission followed by sharing utensils of TB patient (46%), sharing bed/cloths of TB patients (29%) and breathing of TB patients (26%). However, other 4 percent of the respondents reported several reasons which have shown at the bottom of the Table. There is no variation regarding the knowledge of the modes of TB transmission among different divisions, sex and their residence. Since there is lack of knowledge among the respondents of all possible modes of TB transmission, so there is an opportunity to improve their knowledge to prevent and transmit TB diseases.

Table 17: Distribution of knowledge regarding modes of TB disease transmission

Spread or transmission way of TB	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
TB patient's cough/sneeze	62	58	48	64	61	57	55	61	55	60	58
Share utensils of TB patient	69	56	38	37	40	39	39	54	45	47	46
Share bed/cloths of TB patient	64	34	24	16	22	14	27	31	27	30	29
Breathing of TB patient	41	38	21	6	18	35	23	29	23	28	26
Others*	5	4	5	6	2	0	5	2	3	4	4
Don't know	10	16	25	21	14	20	22	14	20	16	18
N	297	299	330	298	293	296	909	907	650	1166	1816

*Use of tobacco and smoking/Germs/Drinking wine/marijuana/ Excess cold/ Sexual intercourse between couple/ Inherited/ Polluted air/ Use of syringe of TB patients

3.2.4 Knowledge regarding symptoms of TB disease

All the respondents knowledge on TB symptoms was assessed which has been shown in the following Table according to divisions, types of respondents and their residence. Findings suggest that irrespective of divisions, types of providers and areas, 69 percent of respondents mentioned "discharge blood with cough" as a symptom of TB diseases (Male 64% vs. female 75% and urban 66% vs. rural 71%). Second highest symptom was "cough for more than three weeks" (66%) which was slightly higher reported by the rural respondents as compared to urban. Fever for longer period, mild fever at night, and weight loss, each was reported by 13 percent of the respondents. In addition, 9 percent reported chest pain and 7 percent mentioned loss of appetite as a symptom of TB disease. Not significant, yet it was found that there is some variation among the responses by the sex of respondents as well as by the divisions.

Table 18: Distribution of knowledge regarding symptoms of TB disease

Symptoms	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Discharge blood with cough	84	71	57	69	72	64	64	75	66	71	69
Cough for more than 3 weeks	89	68	64	58	45	71	66	66	62	68	66
Fever for longer period	22	13	13	7	7	15	9	17	13	13	13
Mild fever at night	14	9	12	13	20	11	11	15	13	13	13
Weight loss	20	16	10	10	10	11	10	15	11	14	13
Chest pain	9	12	9	5	5	15	7	11	9	10	9
Loss of appetite	8	11	6	6	6	5	4	10	7	7	7
Cough for more than a week	0	1	3	15	4	0	6	2	4	4	4
Others*	4	7	3	7	2	1	4	4	4	4	4
Don't know	3	4	9	6	6	5	6	5	7	5	6
N	297	299	330	298	293	296	909	907	650	1166	1816

*Eye spot/ Jaundice/ Asthma/ Anemia/Physical pain/headache/leg pain/hand pain/Physical weakness

3.2.5 Knowledge regarding preventive measures of TB disease

It is recognized and accepted all over the world that prevention is always better than cure. However different community level study finding revealed that there is lack of knowledge among the community regarding preventive measure of TB diseases. Present study findings also reveal that there is knowledge gap among the male and female respondents. Only 60 percent of respondents (Male 75% vs. female 44%) had knowledge "avoid smoking" as a preventive measure of TB disease. "Keep safe from TB patient" was reported by 28 percent of males and 45 percent of females. "Ensure health environment" is one of the important preventive measures of TB disease, which was reported by about one-fourth of the respondents. Each "avoid discharging cough/sneezing at public place" and "avoid tobacco leaf/nicotine (*soda pata/jorda*)" was reported by 15 percent of the respondents. Too small, yet "vaccination" and "keep safe from cold" was reported by 8 and 2 percent of respondents respectively. Other 5 percent responses have shown at the bottom of the Table. It is observed that there is no significant difference among the different responses by divisions and the residence of respondents.

Table 19: Distribution of knowledge regarding preventive measures of TB disease

Measures	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Avoid smoking	63	66	55	50	52	72	75	44	59	60	60
Keep safe from TB patient	47	44	22	30	35	42	28	45	35	37	37
Ensure healthy environment	27	33	19	16	25	18	23	23	24	22	23
Avoid coughing/sneezing	17	19	13	16	19	9	14	17	14	16	15
Avoid tobacco leaf/nicotine (*sada pata/jorda*)	29	18	13	4	6	17	15	14	14	15	14
Vaccination	4	2	10	22	5	3	6	10	7	9	8
Keep safe from cold	0	4	2	3	1	0	2	2	2	2	2
Others*	3	8	6	7	2	1	5	3	5	4	5
Don't know	11	10	20	16	18	13	11	19	14	15	15
N	297	299	330	298	293	296	909	907	650	1166	1816

*Intake nutritious foods regularly/ Avoid smoking/narcotic product/addiction/ Preventive measure using medicine /Obey doctor's advice/ Use mask to safe from dust/ Avoid work with cotton

3.2.6 Knowledge regarding tests of TB diagnosis and duration of treatment

In response to requirement of TB diagnosis, 98 percent of the respondents emphasized it is prerequisite. Further knowledge on TB diagnosis test was explored and it was found that 88 percent of respondents reported cough test is appropriate for TB diagnosis irrespective of divisions, type of respondents and their residence. In addition one-third of them mentioned about blood test and only 13 percent stated X-ray for detecting TB disease. Six percent of respondents had incorrect knowledge of TB diagnosis test.

Table 20: Respondents' knowledge regarding tests of TB diagnosis

Test of TB diagnosis	Division						Sex		Area		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
TB diagnosis is required	100	99	98	97	99	96	99	98	98	98	98
Test of TB diagnosis											
Cough test	94	84	86	83	92	87	87	88	88	88	88
Blood test	47	48	41	33	17	18	31	38	34	34	34
X-ray	13	22	20	7	2	13	11	15	14	12	13
Others	11	3	7	6	3	4	6	5	6	6	6
Don't know	1	5	3	1	4	3	3	2	3	3	3
N	297	297	323	288	291	284	896	887	639	1144	1783

Urine test/ Stool test/ Chest test/ Doctor's advice/Ultra sonogram

3.2.7 Knowledge regarding places of TB treatment

As mentioned earlier that government of Bangladesh is providing TB treatment free of cost through different public and NGO outlets as well as there is strong media campaign to improve knowledge of people about the place of TB treatment. Survey findings reveal that 68 percent of the respondents reported UHC as a place of TB treatment (Male 74% vs. female 63% and urban 52% vs. rural 77%) followed by TB clinic (32%), NGO clinic (26%), MBBS doctors (16%). Other reported places of TB treatment were district hospital/medical college (14%), HFWC (12%), private clinic (9%), health worker (3%), village doctor (3%), BS outlet (2%) and pharmacy/drug seller (2%).

Table 21: Places of TB treatment reported by respondents according to divisions, sex and areas

Places of TB treatment	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
UHC	75	76	56	65	77	61	74	63	52	77	68
TB clinic	40	41	34	24	20	31	32	31	44	25	32
NGO clinic	29	24	18	36	36	17	24	29	24	28	26
MBBS doctor	17	21	21	17	10	7	12	19	18	14	16
District hos./Medi. Coll.	8	13	9	8	13	31	13	15	16	12	14
HFWC	23	13	19	4	8	6	15	9	12	13	12
Private clinic	6	10	16	7	10	5	9	9	12	8	9
Health worker	2	5	3	3	2	1	2	3	3	3	3
Village doctor	3	3	3	3	4	3	4	2	2	4	3
Blue Star outlet	1	2	3	1	1	0	2	1	1	2	2
Pharmacy/drug seller	1	1	4	0	1	3	2	1	2	1	2
Don't know	0	1	3	1	2	4	2	2	3	1	2
N	297	297	323	288	291	284	896	887	639	1144	1783

3.2.8 Knowledge regarding TB DOTS

Bangladesh's National TB Control Program (NTP) began implementing Directly Observed Therapy, Short-Course (DOTS) in 1993 through some selected public and NGO outlets. We achieved a great success for providing TB treatment successfully. Yet, there is a great scope to involve more clients for receiving TB DOTS therapy if they are properly informed about its importance. Findings revealed that only 4 percent of the respondents had knowledge of using TB medicine regularly and most of them from Dhaka (9%) followed by Barisal (5%) and Khulna (5%) as compared to other divisions. On the other hand, only about 1 percent of the respondents reported that they had heard about TB DOTS which is alarmingly low. It may occur due to non acquaintance with the term of TB DOTS by the respondents. In response to correct knowledge of TB DOTS, about 80 percent of respondents who heard about TB DOTS know the correct implication of TB DOTS (Only 19 respondents). On the other hand, among all respondents, 92 percent stated that TB disease is fully curable under certain environment. Major environment includes proper treatment (68%), use full course of medicines (65%), testing cough and start treatment timely (19%) and testing cough and start treatment timely (6%).

About half of the respondents mentioned avoid smoking as an important requirement of TB treatment. Forty seven percent of the respondents emphasized using medicines regularly, 34 percent reported visiting doctor regularly and one-forth of the respondents stressed to have nutritious food.

About universally (98%) respondents were aware that full course medicine is required to be fully cured from TB diseases. On the contrast, 96 percent of them answered that irregular use of medicines will not cure TB disease fully, 5 percent claimed it will recur and 1 percent stated that patient may die.

To receive a general idea in the locality of the respondents, a question was asked among them whether TB patient use full course of medicines or not. About half of the respondents stated that patients use full course of medicines, 23 percent stated patients stops medication when feels better and 30 percent did not response as this is not the respondents' behavior or they did not find any TB patients.

Table 22: Respondents' knowledge regarding TB DOTS

Responses	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Know method of ensuring regular use of medicine on TB	5	2	9	5	2	1	3	5	4	4	4
Heard about TB DOTS	2.4	0.7	3.9	0.3	0	0.3	1.4	1.2	1.8	1.0	1.3
N	**297**	**299**	**330**	**298**	**293**	**296**	**909**	**907**	**650**	**1166**	**1816**
Correctly knows about TB DOTS	100	100	62	100	0	100	69	91	67	92	79
N	**7**	**2**	**13**	**1**	**0**	**1**	**13**	**11**	**12**	**12**	**24**
Perceive that TB can be fully treated	95	93	89	89	93	93	94	90	93	91	92
N	**297**	**299**	**330**	**298**	**293**	**296**	**909**	**907**	**650**	**1166**	**1816**
Necessary steps to be fully cured											
Proper treatment	73	73	61	70	52	82	68	68	68	69	68
Use full course of medicines	84	74	63	64	57	49	63	68	65	66	65
Timely test cough and treatment	6	20	24	34	21	10	17	21	18	19	19
Timely test blood and treatment	4	13	9	6	4	2	5	8	7	6	6
Don't know	1	0	4	0	2	3	2	1	2	2	2
Others*	2	3	2	2	2	1	3	2	2	2	2
N	**283**	**278**	**294**	**264**	**272**	**276**	**857**	**813**	**604**	**1066**	**1670**
Important aspects/requirement of TB treatment											
Avoid smoking	58	66	39	45	43	53	64	37	48	52	51
Use medicine regularly	70	62	34	48	52	18	45	49	43	49	47
Visit doctor regularly	11	22	45	59	25	39	35	33	37	32	34
Taking nutritious food	33	37	13	14	26	20	18	30	22	25	24
Others**	6	13	3	4	2	4	6	4	5	5	5
Don't know	8	5	14	7	5	13	7	10	9	8	9
N	**297**	**299**	**330**	**298**	**293**	**296**	**909**	**907**	**650**	**1166**	**1816**
Full course medicine is required to be fully cured from TB	99	99	97	99	99	97	98	99	99	98	98
Why important to use medicine regularly											
Irregular use does not cure fully	99	92	97	96	97	97	97	96	98	96	96
Disease will recurrent	2	10	3	9	4	1	5	5	3	5	5
Patient will die	0	0	1	0	0	2	1	1	1	1	1
Practice of TB patient regarding use of full course of medicines											
Takes full course	44	59	39	40	67	31	46	47	43	49	47
Stops medication if feels better	38	19	18	17	21	27	27	19	23	23	23
Don't Know/Can't say	18	21	43	43	13	43	27	34	35	28	30
N	**295**	**296**	**320**	**294**	**290**	**287**	**887**	**898**	**640**	**1145**	**1785**

* Use medicines for 3 months/Intake nutritious food/Keep safe from cold/Don't infected with cold

** Separate bed, utensils from others/Maintain distance from infected person/Obey advices of doctors/Avoid narcotic products/Don't spit any place/Keep neat and clean/Avoid dust/Live healthy environment/Take rest/Test blood/Avoid battle leaf/Tobacco/Test cough/Keep safe from cold

3.3 ATTITUDE REGARDING TB

3.3.1 Attitude of neighbors towards TB patients

Lack of proper knowledge about any dangerous, contaminated or infected diseases leads/creates certain behavior in the community towards the patients. Since TB disease can be easily transmitted from infected person to others, so there is potentially to develop certain behaviors in the society. As part of gaining such kind of knowledge, all of the respondents were asked to perceive idea about the neighbors' behavior towards TB patients. Half of the respondents stated that community behaves well with the infected person. However, about 48 percent of the respondents also stated that community maintains a certain distance from the infected person (Such as they do not move together). About one-fourth of them reported that community people advice patients for treatment. On the other hand, 10 percent of the providers claimed that community isolates the infected persons from their society and they can not do anything. In addition to these responses, there were some other behaviors (6%) which have been shown at the bottom of the Table.

Table 23: Behavior of neighbors towards TB patients

Behaviors	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Behave well	60	52	48	52	30	57	46	53	48	51	50
Maintain distance	44	47	42	44	66	45	49	46	47	48	48
Advise for treatment	6	24	32	23	18	28	19	25	24	21	22
Isolate the patient	3	11	12	5	14	10	7	12	11	9	9
Others*	2	6	8	6	10	2	6	5	6	6	6
N	297	299	330	298	293	296	909	907	650	1166	1816

* Don't use same pond/ Don't give bride to TB patient/ Husband avoid wife/ Don't behave well/ Can't say/Never seen any patient

3.3.2 Perceptions regarding severity of TB disease

Clear perception of any certain issues always had a positive impact of behavior or practice. In response to respondents' perception about the severity of TB disease, 46 percent perceive TB as very dangerous disease, 12 percent mentioned dangerous and 6 percent stated as moderately dangerous. However, only one-third of the respondents perceive that TB is not dangerous or not dangerous at all.

Table 24: Perceptions regarding severity of TB disease

Degree of severity	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Very dangerous	53	58	52	39	20	58	46	47	46	47	46
Dangerous	4	10	17	11	23	8	13	12	13	12	12
Moderately/partially dangerous	1	2	7	6	13	6	6	6	7	6	6
Not feel dangerous	30	25	19	37	41	22	28	30	26	30	29
Not feel dangerous at all	12	3	5	7	2	5	6	5	7	5	6
Don't know	1	2	1	0	0	1	1	1	1	1	1
N	297	299	330	298	293	296	909	907	650	1166	1816

3.3.3 Reasons for perceiving TB as dangerous disease

Those who perceive TB as dangerous disease they were explored to state the reasons to perceive TB as dangerous. About three-fourth (73%) of the respondents perceived TB as dangerous as it cause death followed by pass blood with cough (25%), life become miserable (16%) and neglected by the society (10%). In addition, 9 percent of the respondents stated TB as dangerous disease as it causes loss of appetite/weight/makes thin, 8 percent claimed loose working ability. It reduces income and transmits from infected person to others each was reported by 6 percent of the respondents.

Table 25: Reasons for perceiving TB as dangerous disease

Reasons	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Causes death	91	80	65	80	58	66	75	70	74	72	73
Pass blood with cough	4	33	25	22	20	37	22	28	26	24	25
Life become miserable	10	15	21	18	15	17	14	19	14	18	16
Neglected in the society	2	10	6	11	21	10	10	10	10	10	10
Loss appetite/become thin/loss weight	1	12	14	7	7	10	8	10	10	8	9
Loose working ability	8	11	10	2	6	8	8	7	9	7	8
Reduce income	3	8	7	2	4	8	3	9	7	5	6
Transmit from infected person to others	2	5	6	9	8	7	8	4	4	7	6
Others*	0	4	2	4	1	1	2	1	1	2	2
Don't know	0	2	4	0	2	3	2	2	3	2	2
N	172	208	249	165	164	213	589	584	427	746	1173

* Suffer from insomnia/physical pain/transmit from infected mother to baby/may cause cancer

3.3.4 Perceived reasons of respondents for hiding suspected or infected TB case by the patients

Different study findings suggest that due to several reasons people hide their suspected or infected case of TB. Present study also explored the issues for hiding suspected or infected TB cases by the patients. Study separately collected information for males and females to explore the possible reasons. Majority females hide their disease due to fear of ignorance by the society/people may hate them (79%). Fear to be isolated from society was reported by one-fourth of the respondents. One-fifth of the respondents stated that females hide their disease due to fear of being separated by the husbands. In addition, due to fear of getting married was reported by the 15 percent of respondents.

On the other hand, 78 percent of respondents stated that due to fear of ignorance by the society or people may hate them was prime reasons for hiding TB disease by males like females followed by fear to be isolated from the society (26%) and wife may separate (11%) him. Another important issue "problems at working place" was raised by the 10 percent of respondents. Smoking is one of the important causes of infecting with TB and 8 percent of the respondents stated that male hide TB disease due to continue their behavior of smoking. For both male and female responses, one out of ten respondents did not report any reasons.

Table 26: Perceived reasons for hiding suspected or infected case by the respondents

Reasons	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
For female											
Fear of ignorance by society/people may hate	86	68	75	86	75	81	78	79	81	77	79
Fear to be isolated from society	20	35	25	41	14	22	20	32	26	26	26
Fear husband may separate	16	18	22	16	19	23	18	20	21	18	19
Fear to get married	16	9	13	21	15	14	15	14	14	15	15
Don't know	6	18	13	8	13	15	14	11	11	13	12
Others*	3	17	6	2	2	1	5	6	5	5	5
For male											
Fear of ignorance by society/people may hate	87	67	75	82	75	83	81	75	80	77	78
Fear to be isolated from society	17	37	24	36	13	30	21	31	27	26	26
Fear wife may separate	9	16	14	9	6	11	7	15	13	9	11
Problem at working place	4	5	9	22	13	8	12	8	9	11	10
Need to stop smoking	1	18	11	1	6	11	6	10	9	7	8
Others**	1	9	4	2	2	0	5	1	2	4	3
Don't know	6	15	13	10	12	9	10	12	10	12	11
N	297	299	330	298	293	296	909	907	650	1166	1816

* Problem at working place/ Need to stop smoking/ Due to lack of money others may feel it as burden
** Fear to get married/ Lack of money/ People isolate infected person

3.3.5 Reasons for not using medicines regularly by the patients

In most cases, TB patients do not use medicines regularly which delay to be fully cured or sometime cause death to patients. TB DOTS is an effective therapy which brought success to reduce TB disease burden and deaths of patients. In this situation it is necessary to know the reasons for irregular use of medicines by the patients so that TB DOTS program can address these issues to rapid its success. The respondents were requested to find out the reasons separately for males and females. In general, the prime reasons for irregular use of medicines both for male and female was "felling better temporarily" (male 39% vs. female 36%) followed by "lack of money" (male 37% vs. female 34%), "unwilling/laziness to use medicines" (male 36% vs. female 34%), "lack of awareness" (male 22% vs. female 18%), "forget to take medicines" (male 21% vs. female 22%) and "busy for work" (male 20% vs. female 22%). In addition, there are some other insignificant responses which have been shown in the Table.

Table 27: Reasons for not using medicines regularly

Reasons	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
For male											
Feeling better	64	44	36	48	22	21	42	37	40	39	39
Lack of money	33	45	42	41	31	31	36	38	38	37	37
Unwilling/laziness to use medi.	30	33	29	51	33	39	34	37	37	35	36
Lack of awareness	10	20	20	22	25	34	23	21	22	22	22
Forget to take medicine	17	17	24	16	23	31	17	26	22	21	21
Busy for work	17	17	23	19	15	28	21	19	23	18	20
Long course of dose	0	5	5	6	1	14	4	6	7	4	5
Unavailability of medicine	2	6	2	4	1	2	2	3	3	3	3
Visit other place without medi.	1	3	2	1	1	2	2	2	1	2	2
Don't know	0	3	7	4	5	4	4	4	4	4	4
For female											
Feeling better	64	40	29	46	22	14	38	33	37	35	36
Lack of money	32	44	36	38	28	26	32	36	36	33	34
Unwilling/laziness to use medi.	31	30	25	54	30	36	33	35	34	34	34
Busy for work	20	17	27	26	8	31	20	23	25	20	22
Forget to take medicine	18	14	27	15	24	33	17	27	21	22	22
Lack of awareness	9	21	11	24	25	19	20	16	19	18	18
Long course of dose	1	4	11	13	3	17	9	8	9	8	8
Unavailability of medicine	3	8	4	3	1	3	4	4	4	4	4
Visit other place without medi.	1	5	5	2	1	10	3	5	5	3	4
Doctor not briefed time frame	0	2	3	1	0	8	1	3	3	2	2
Don't know	0	4	7	4	6	9	6	4	5	6	5
N	297	299	330	298	293	296	909	907	650	1166	1816

3.3.6 Intention of community people to learn about TB and its expected sources

Before introducing any interventions to improve knowledge on TB /TB DOTS program, it is useful to gather information from the prospect target group about their willingness and possible sources of media/channel of information. In this survey all of the respondents were requested to inform about the communities interest of knowing more about TB diseases. Findings suggest that 87 percent of the respondents irrespective of the sex and their residence stated that community people will be interested to learn more about TB diseases mostly through television (63%) followed by GoB and NGO workers (54%). Other less important sources were radio, newspaper/magazine, polli chikitshok/village doctors, private/MBBS doctors, micking/yard meetings/seminar and pharmacy.

Table 28: Intention of community people to learn about TB and its expected sources

Reasons	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Proportion of communities want to know information about TB	94	89	79	66	95	97	86	87	87	87	87
Sources/channels of information											
TV	55	86	71	39	70	50	74	52	66	61	63
GoB/NGO workers	63	42	43	72	54	54	45	63	49	57	54
Radio	11	11	17	3	10	12	16	6	13	9	11
Newspaper/magazine	4	7	10	2	11	7	9	5	8	7	7
PC/village doctors	3	2	4	14	9	11	10	4	6	7	7
Private/MBBS doctors	7	3	10	6	8	3	3	9	8	5	6
Micking/yard meeting/seminar	2	2	7	1	4	6	4	3	3	4	4
Pharmacy	0	0	3	8	0	7	4	2	4	2	3
Others	2	6	5	1	3	2	5	1	3	3	3
N	283	267	262	196	282	291	786	797	568	1015	1583

* BS providers/ Paramedics/FWV/ Leaflet distribution from mosque/ Mobile films/ Mobile phone/ Signboard/billboard/wall writing/Bus writing/Rally/

3.3.7 Knowledge regarding reasons for infecting with TB disease by respondents background information

The following Table represents cross distribution of the reported reasons for infecting with TB by the respondents age, residence, sex, division, education and their family income. Findings reveal that there are no significant differences among the responses by the age group of the respondents and their residence. However, it is observed that in some cases male respondents had better knowledge as compared to females (I.e., smoking reported by 81% male & 52% female). However, there are some variations regarding knowledge of infecting with TB by divisions. Knowledge level is comparatively high among educated and higher family income groups.

Table 29: Reasons for infecting with TB diseases by the respondents background characteristics

Characteristics	Major reasons					
	Smoking	Long time cold/ cough	Using tobacco	Living with TB patient	Germs	Living at dirty/ damp area
Age (in years)						
Below 25	66	46	23	14	12	7
25-29	67	43	26	15	12	7
30-34	67	44	20	13	9	9
35-39	65	40	24	15	14	10
40 or above	69	34	29	17	11	7
Area						
Urban	67	38	27	12	10	9
Rural	66	44	23	16	13	7
Sex						
Male	81	34	25	14	11	10
Female	52	50	24	15	13	6
Division						
Barisal	69	45	43	16	29	4
Chittagong	73	45	23	27	9	16
Dhaka	63	34	21	6	12	7
Khulna	52	52	6	18	10	4
Rajshahi	67	56	12	17	9	6
Sylhet	77	19	43	6	2	7
Education						
Incomplete primary	57	36	19	19	10	8
Complete primary	67	43	25	16	12	9
SSC/Dakhil	74	44	24	15	15	6
HSC/Alim/Diploma	72	49	26	19	29	10
BCom/BA/Fazil	72	50	31	11	17	6
M. Com/MSc	83	60	44	19	38	25
Family income						
Less than 5000 Tk.	68	40	20	14	6	6
5000-7500 Tk.	67	43	24	16	11	9
7501-10000 Tk.	67	44	29	15	16	8
10000+ Tk.	65	40	27	13	17	9
National	**67**	**42**	**25**	**15**	**12**	**8**

3.3.8 Knowledge of TB transmission modes by the respondents background characteristics

The following Table represents cross distribution of the reported mode of transmission of TB by the respondents age, residence, sex, division, education and their family income. Findings reveal that there are no significant differences among the responses by the age group of the respondents and division. However, it is observed that in some cases female and rural respondents had better knowledge regarding mode of TB transmission as compared to male and urban respondents. Similarly, knowledge level is comparatively high among educated and higher family income groups.

Table 30: Knowledge of TB disease transmission modes by the respondents' background characteristics

Characteristics	Modes of transmission			
	TB patient's cough/sneeze	Share utensils of TB patient	Share bed/cloths of TB patient	Breathing of TB patient
Age (in years)				
Below 25	62	39	25	25
25-29	51	46	30	23
30-34	56	50	30	23
35-39	56	53	29	28
40 or above	61	50	34	31
Area				
Urban	55	45	27	23
Rural	60	47	30	28
Sex				
Male	55	39	27	23
Female	61	54	31	29
Division				
Barisal	62	69	64	41
Chittagong	58	56	34	38
Dhaka	48	38	24	21
Khulna	64	37	16	6
Rajshahi	61	40	22	18
Sylhet	57	39	14	35
Education				
Incomplete primary	46	55	32	21
Complete primary	58	45	27	26
SSC/Dakhil	70	45	30	29
HSC/Alim/Diploma	77	40	36	34
BCom/BA/Fazil	92	42	28	28
M. Com/MSc.	88	50	44	38
Family income				
Less than 5000 Tk.	54	48	28	20
5000-7500 Tk.	58	43	28	25
7501-10000 Tk.	60	49	33	31
10000+ Tk.	63	47	28	32
National	**58**	**46**	**29**	**26**

3.3.9 Knowledge of TB symptoms by the respondents background characteristics

The following Table represents cross distribution of the reported reasons of TB symptoms by the respondents age, residence, sex, division, education and family income. Findings reveal that there are no significant differences among the responses by the age group of the respondents and the divisions (except Barisal). Table indicates that in some responses females and rural respondents had better knowledge as compared to males and urban respondents. On the other hand, knowledge level is comparatively higher among educated and higher family income groups.

Table 31: Knowledge regarding symptoms of TB disease by the respondents' background information

Characteristics	Symptoms					
	Discharge blood with cough	Cough for more than 3 weeks	Fever for longer period	Mild fever at night	Weight loss	Chest pain
Age (in years)						
Below 25	67	70	11	11	10	8
25-29	68	67	13	12	13	5
30-34	70	65	16	10	9	11
35-39	71	64	14	16	17	13
40 or above	71	61	13	16	17	11
Area						
Urban	66	62	13	13	11	9
Rural	71	68	13	13	14	10
Sex						
Male	64	66	9	11	10	7
Female	75	66	17	15	15	11
Division						
Barisal	4	89	22	14	20	9
Chittagong	71	68	13	9	16	12
Dhaka	57	64	13	12	10	9
Khulna	69	58	7	13	10	5
Rajshahi	72	45	7	20	10	5
Sylhet	64	71	15	11	11	15
Education						
Incomplete primary	64	52	7	10	14	10
Complete primary	69	67	13	13	12	9
SSC/Dakhil	72	74	19	15	16	7
HSC/Alim/Diploma	69	81	18	18	17	11
BCom/BA/Fazil	61	92	11	11	11	0
M. Com/MSc.	71	77	24	12	18	12
Family income						
Less than 5000 Tk.	71	51	11	12	12	9
5000-7500 Tk.	68	67	10	14	12	12
7501-10000 Tk.	70	75	16	12	13	10
10000+ Tk.	67	76	17	13	15	6
National	**69**	**66**	**13**	**13**	**13**	**9**

3.3.10 Knowledge regarding preventive measures of TB by the respondents background characteristics

The following Table represents cross distribution of the preventive measures of TB disease by the respondents age, residence, sex, division, education and family income. Findings reveal that there are no significant differences among the responses by the age group of the respondents, their residence and family income. However, it is observed that in some cases responses was higher among the educated respondents. On the other hand, there are some variations regarding knowledge of preventive measures of TB diseases by divisions.

Table 32: Knowledge of preventive measures of TB disease by respondents' background information

Characteristics	Preventive measures					
	Avoid smoking	Keep safe from TB patient	Ensure healthy environment	Avoid cough/ sneezing	Avoid tobacco leaf/nicotine	Vaccination
Age (in years)						
Below 25	59	35	22	16	10	9
25-29	57	38	22	15	17	5
30-34	62	36	25	14	13	9
35-39	59	39	24	14	15	8
40 or above	61	37	22	17	19	8
Area						
Urban	59	35	24	14	14	7
Rural	60	37	22	16	15	9
Sex						
Male	75	28	23	14	15	6
Female	44	45	23	17	14	10
Division						
Barisal	63	47	27	17	29	4
Chittagong	66	44	33	19	18	2
Dhaka	55	22	19	13	13	10
Khulna	50	30	16	16	4	22
Rajshahi	52	35	25	19	6	5
Sylhet	72	42	18	9	17	3
Education						
Incomplete primary	48	38	24	12	10	8
Complete primary	61	36	23	15	14	8
SSC/Dakhil	67	39	27	21	15	9
HSC/Alim/Diploma	64	38	40	23	11	15
BCom/BA/Fazil	64	25	28	11	25	19
M. Com/MSc.	71	53	35	24	24	18
Family income						
Less than 5000 Tk.	59	38	17	16	11	7
5000-7500 Tk.	60	35	24	16	14	9
7501-10000 Tk.	60	35	23	14	18	6
10000+ Tk.	60	39	30	15	15	10
National	**60**	**37**	**23**	**15**	**14**	**8**

CONCLUSIONS AND RECOMMENDATIONS

Based on the above discussion of the study findings the following conclusions and recommendations can be made for non-graduate medical practitioners and community people:

1. Knowledge level of non-graduate medical practitioners regarding TB disease comparatively is not up to the mark, especially knowledge regarding TB DOTS is poor. On the other hand, knowledge level is quite poor among the community people in terms of reasons of infecting with TB, modes, symptoms and prevention measures of TB. So, there is a great scope to address both the groups to improve their level of knowledge regarding TB disease.

2. As the GoB and NGO (especially BRAC) has a successful story to ensure regular use of TB medicines through different outlets in assistance with fieldworkers and volunteers. On the other hand, non-graduate medical practitioners are potential in their locality for providing services to a good number of clients each day. In this circumstance, involvement of non-graduate medical practitioners for providing TB DOTS services will be an added advantage for the government.

3. There is lack of proper knowledge among the non-graduate medical practitioners about TB DOTS services. However, due to their potentiality and considering the higher prevalence of TB diseases, we may involve them in the TB DOTS program under addressing certain prerequisite requirements. Essentially they need proper training on TB DOTS services. However, a combination of different holistic approach may bring a success and sustainable TB DOTS program such as support through necessary logistics includes free supply of diagnosis materials, drugs and medicines.

4. Eventually it is mandatory to approach both community and non-graduate medical practitioners together to improve their knowledge on TB and TB DOTS services to maintain a harmony between demand and supply requirements. Otherwise, addressing only community people or only non-graduate medical practitioners for improving knowledge and making available services may cause imbalance between demand and supply of TB DOTS services.

5. Though knowledge level of TB DOTS is quite low among the providers as well as community people. Yet, it is observed that those providers or community people have heard about TB DOTS they correctly know about its implication. So, undoubtedly it can be recommended that awareness raising program on TB DOTS will bring a great success to control TB disease in Bangladesh.

6. Selection of proper media vehicle is an important aspect for improving knowledge level of community people regarding TB and TB DOTS services. Though different media vehicle can be targeted for different segment of population considering their level of education and socio-economic status, yet study findings found that television is by far the most important source of channel for disseminating information about TB diseases. In addition, involvement of non-graduate medical practitioners for disseminating information about TB disease may be another great scope for strengthening existing TB DOTS program.

7. Lack of proper knowledge about any dangerous, contaminated or infected diseases lead certain behavior in the community towards the patients. Findings suggest half of the community respondents perceive that patients are ignored in the society. This can be easily minimized through disseminating proper information among the community people about TB disease and its treatment. In addition, a large proportion of community people also perceive that TB cause death. So before selecting a preferable media vehicle we need to identify some key messages through pretesting facility.

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The RFP of the study suggested interviewing both men and women at household level to assess knowledge, attitude, practice and perception related to TB and TB DOTS. We covered equal number of male and female respondents for the household surveys to explore KAPP on TB and TB DOTS among male and female separately. As per SMC requirement, sample has been collected within the 2 km. radius of the selected NGMP BLUE STAR providers. To get a representative sample in each area, household listing were completed through transect walk *(This is one kind of PRA approach to list household through quick walk at the community with the help of local stakeholders)* to prepare a sampling frame. Finally to meet the required number of respondents, households have been selected through systematic random sampling procedure using the sampling frame. So, finally approximately 38 samples were selected from each upazila i.e., at least 6 samples (3 male & 3 female) have been drawn from each of the selected NGMP of BLUE STAR areas which also matched with the requirements of SMC addressed collection of at least 5 samples from each of the selected NGMP of BLUE STAR areas. After random selection of 48 upazilas, list of NGMPs of these upazilas were collected from SMC for smooth implementation and maintain accuracy of data collection process.

1.9.6 Sample Size

Sample size both for providers and community people have shown in the following Table. Since SMC has started training program on TB for the BS providers in Barisal so study did not collect any information from the BS providers in this division.

Sample distribution of the study

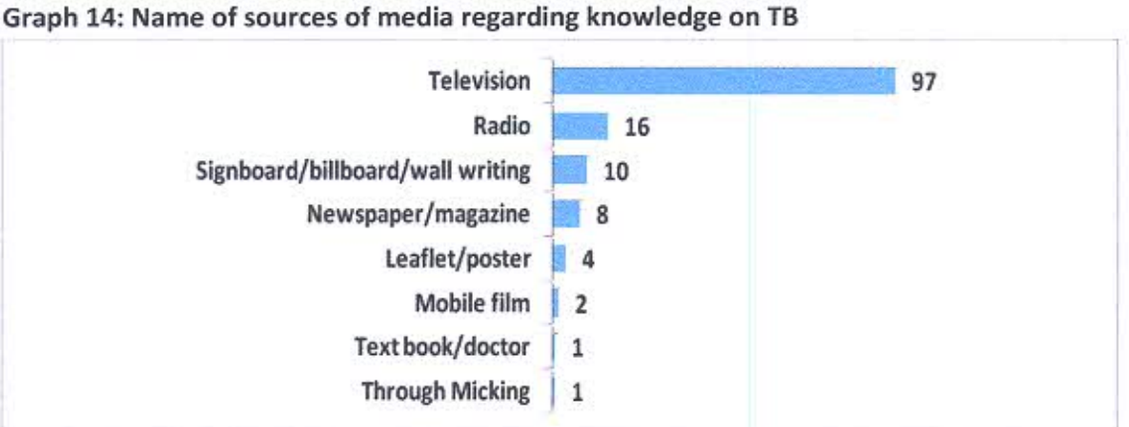
Divisions	Providers sample					Community sample				
	Urban		Rural		Total	Urban		Rural		Total
	BS	Non-BS	BS	Non-BS		Male	Female	Male	Female	
Barisal	0	17	0	34	**51**	51	51	98	102	**302**
Chittagong	18	14	40	38	**110**	42	38	106	115	**301**
Dhaka	39	28	33	23	**123**	89	95	78	70	**332**
Khulna	16	14	42	35	**107**	43	45	106	106	**300**
Rajshahi	19	14	42	33	**108**	42	33	108	117	**300**
Sylhet	27	23	28	29	**107**	61	67	90	82	**300**
Total	**119**	**110**	**185**	**192**	**606**	**328**	**329**	**586**	**592**	**1835**

Table 15: Respondents' awareness and sources of TB information

Issues	Divisions						Sex		Areas		All
	Bar.	Ctg.	Dhk.	Khl.	Raj.	Syl.	Male	Female	Urban	Rural	
Heard about TB	99	100	99	100	99	99	100	99	99	100	99.5
N	**302**	**301**	**332**	**300**	**300**	**300**	**914**	**921**	**657**	**1178**	**1835**
Sources of knowledge on TB											
Mass media	79	86	86	79	86	70	84	78	82	80	81
Neighbor/Elite person	52	33	36	38	55	56	47	42	43	45	45
NGO worker	17	7	6	13	16	4	8	13	8	12	11
GoB workers	11	4	6	6	6	3	5	7	4	7	6
TB patients	9	8	11	2	1	4	6	6	8	5	6
PC/Village doctor	3	3	2	7	3	9	6	3	4	5	4
Private/MBBS doctors	4	2	6	2	1	2	3	2	3	2	3
Pharmacy	2	1	2	1	0	3	2	1	3	1	2
Seminar/Micking/Mobile film	1	1	2	1	4	1	1	2	1	2	2
Others (BS providers/FWV)	1	0	1	1	0	0	1	1	0	1	1
N	**297**	**299**	**330**	**298**	**293**	**296**	**909**	**907**	**650**	**1166**	**1816**

Since respondents emphasized that they have heard about TB disease mostly from the mass media, so further investigation was required to know more about the name of each media. Television was by far the most important media vehicle that was reported by 97 percent of the respondents (Graph 14). Other sources were radio (16%), signboard/billboard/wall painting (10%), newspaper/magazine (8%), leaflet/poster (4%) and mobile film/text book/announcement through mike. It was found that all type of media is important if we consider different segments of populations as our target groups for improving awareness about TB diseases.

Graph 14: Name of sources of media regarding knowledge on TB



N=1471

3.2.2 Knowledge regarding reasons for infecting with TB

The following Table shows knowledge of respondents regarding reasons of infecting with TB diseases. Findings revealed that overall 12 percent of the respondents (even slightly higher for female and rural respondents) did not know the reasons for infecting with TB diseases. It is found that 67 percent of them reported smoking as a top most reason which causes TB and this proportion was quite high among male as compared to female respondents (male 81% vs. female 52%). Suffering from cold/cough for longer period is another factor of infecting with TB was reported by 42 percent of the