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A Health Literacy RCT toward Improvement of Programmatic Outcomes of Tuberculosis Control in the Tribal Areas of Pakistan

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Introduction

According to World Health Organization, 9 million people contracted tuberculosis (TB) in 2013 and in the same time period 1.5 million died from the disease (WHO, 2013). The agency estimated that in the same year 550,000 children became ill with TB and 80,000 HIV-negative children died of TB. Further that close to half a million people developed multidrug resistant TB (MDR-TB) requiring longer and costlier treatment. Pakistan is one of the 5 countries with high incidence of tuberculosis and possibly rising numbers of MDR and XDR (extensively drug resistant) varieties of the infection.

In recognition of the worldwide case of resurgence of tuberculosis, Pakistan implements a National TB Control Program. One of its most important components works in the Federally Administration Tribal Areas (FATA) that are afflicted by violence and militancy for the past one decade. The traditional tribal culture and the security issues complicate access to communities. This evaluation was carried out as part of the FATA Governance Support Program's capacity building initiatives under PCNA implementation and direct support to Directorate of M&E FATA Secretariat. TBCP was selected from a list of important projects under implementation in FATA. The program was selected due to its importance to health outcomes in the region as well as potential of policy lessons to be learnt for achieving higher results through evidence led programmatic initiatives. This evaluation was also planned to plug in gaps in information. TBCP implementation has been an ongoing program in the tribal areas since 2007. Other than the individuals coming to the diagnosis centers and patients returning for tests and additional doses of medication, little is known about the population's knowledge of tuberculosis and attitudes toward accessing healthcare. This lack of information debilitates outreach efforts and reduces the

scope of planning interventions suited to population characteristics. The evaluation seeks to provide these pieces of information for strengthening TBCP implementation in FATA and initiate evidence led interventions for improving programmatic outcomes.

Salient Features of the Tuberculosis Control Program

Tuberculosis is a disease which has made a comeback and is once again a major public health issue in many countries. In Pakistan it is a major concern as the country ranks 5th among the 22 countries with the highest burden of tuberculosis in the world. With its large number of cases, Pakistan carries 55 percent of the tuberculosis disease burden in the Eastern Mediterranean Region of World Health Organization (WHO). In recognition of the rising number of cases, tuberculosis was declared a national emergency by the Ministry of Health in 2001. In April 2001 DOTS (Directly Observed Treatment Short Course) program, the WHO recommended strategy for TB control, was launched in Khyber Agency FATA as a pilot. From 2003, onward this has been scaled up to reach all tribal agencies. The TB Control Program (TBCP) in FATA follows a comprehensive and community-based strategy and it is integrated with Primary Health Care services and other health programs for higher outreach and providing ease of access. The current phase of the program was started in 2007 and it provides diagnostic and curative services through 27 centers across the FATA agencies and regions.

The program has pursued DOTS expansion and enhancement, focused on TB/HIV co-infection, attempted to address MDR and XDR TB, sought to empower individuals and communities through promotion of health literacy and strengthening of health systems. It has pursued improvements in diagnosis and treatment. TBCP is pursuing specific programmatic outcomes in the forms of aiming to achieve 70 percent case detection rate (CDR), 85 percent

treatment success rate (TSR) and Default Rate of less than 5 percent, thus fulfilling MDG 6C. At the same time, TBCP aims to enhance the awareness of the population on TB, in particular on recognition of early symptoms, diagnosis and adherence to treatment.

For increase in CDR, TBCP has relied on building health literacy and through this approach achieve a higher attendance of individuals with symptoms at its diagnostic centers. In this regard, TBCP has carried out awareness campaigns to build health literacy of tuberculosis. It has sent out social mobilization schemes to villages to impart knowledge of symptoms, availability of cure and information of diagnostic and treatment centers. Special programs have been held at schools to inform the school children and through them reach out to households with knowledge of tuberculosis and TBCP. This indirect method of reaching out households through schools was adopted to minimize costs and to gain access in impervious tribal communities.

TBCP anticipates 9,240 new cases per annum. It had declared to achieve 46 percent CDR in 2012 against the WHO set target of 70 percent. This was calculated using incidence risk of 231/100,000 population. TBCP provides diagnostic and curative services free of charge to the residents of FATA. The program is providing free TB care to the patients in a population of 4.4 million[1] in 7 agencies and 6 Frontier Regions of FATA. The program also declares to achieve a treatment success rate of above 90 percent against the WHO target of 85 percent. From the commencement of TBCP in 2002 up until now, it has registered 41,317 patients and provided free medication for the 06/08 months treatment.

TBCP has aimed to half the burden of TB by 2015 in line with MDGs (Millennium Development Goal-6). This objective is also in line with the global strategy to reduce MDR TB cases by emphasis on 'find, cure and prevent.' The current phase of the program ends in 2015.

[1] Source: FATA Development Statistics 2013, Bureau of Statistics FATA Cell P&D FATA Secretariat: Table No. 103: page 135: estimated population in FATA for 2013

This evaluation therefore is timely in providing policy and programmatic results for the following phase of the program.

Importance of Community Preparedness for Tuberculosis

FATA's health system relies on the health seeking behavior of the members of the community tuned up for higher access and utilization of services. In case of tuberculosis, it relies on the patients and their households to seek diagnosis and if diagnosed positive, to seek treatment and adhere to the regimen. TBCP facilities have been designed to meet this enhanced demand from communities and provide early diagnosis and follow it up with efficacious treatment.

A key component of this approach and for its efficacy is to build health literacy of tuberculosis in the community. This is to enable individuals and households to recognize symptoms, seek early diagnosis and upon diagnosis join the therapeutic regimen provided at the TB centers. The entire program hinges on the knowledge leading to health seeking attitudes and practices in the communities. Therefore, the TB program has invested efforts in building health literacy in the tribal communities since its inception.

Evaluation Questions and Scientific Rationale for the Approach

In May 2014, FATA Governance Support Program, TB Control Program, Directorate of Health Services FATA, and Directorate of M&E FATA settled on the following evaluation questions as the most relevant to policy and program development:

1. What is the effectiveness of TBCP's advocacy program and adherence with treatment regime/completion of full TB course for treatment and thus prevention of MDR and XDR cases?
2. How the existing communication and advocacy strategy can be improved to enhance CDR in the FATA?
3. What is the impact of the TB control program on the perception of tribal people (both TB patients and General Public) with reference to trust in state?
4. What is the extent of prevalence of co-infection of TB and HIV in the FATA region?

An evaluation scheme was initially designed to address all 4 evaluation questions. Later on the program expressed reluctance in carrying out data collection on HIV and TB co-infection. The program anticipated that it will attract negative attention which putatively exists around HIV infection. Due to this reason, the fourth question was dropped from evaluation.

An evaluation approach was designed to address the first question. This involved carrying out a survey of knowledge, attitude and practices of the communities in the tribal areas. The second question posed a challenge in the form of generating evidence for what may work in the difficult circumstances faced by the program in the tribal areas. Two randomized controlled trial were designed to address the question. The first RCT focused on testing the efficacy of a feasible and low cost advocacy method to enhance tuberculosis literacy in the tribal areas. The second RCT was designed to enhance treatment adherence in patients under the program to prevent going into susceptibility to MDR and XDR tuberculosis. The RCT and the survey data combined would provide clean measures to be used to analyze the effect of TBCP efforts at

promoting tuberculosis literacy in the tribal communities as well as at treatment regimen adherence. The survey was designed to provide indirect measures of citizen trust in the state.

The TB Control Program has carried out outreach into the tribal communities since 2007. The outreach activities have used several approaches to penetrate the messages about TB. They have aimed at health literacy of tuberculosis, recognition of its symptoms to enhance case detection rate. This approach relies on individuals and households reaching the 27 diagnostic centers set up across the tribal areas.

Tuberculosis is a major public health challenge in Pakistan.[2] The prevalence of tuberculosis has risen over the past couple of decades. For FATA in the absence of reliable epidemiological data, it is hard to surmise about prevalence. It is a hard to reach area and the TBCP has been making headway over time. At the same time, it is to be recognized that community outreach is an important strategy to enhance CDR, increase the fraction of patients in treatment, achieve high treatment completion rates and adopt measures to limit transmission. Without higher levels of health literacy of tuberculosis in the tribal communities, the objectives of 'find, cure and prevent' are hard to achieve.

To grapple with the burgeoning problem of tuberculosis incidence in Pakistan and rising numbers of MDR and XDR (Butt et al, 2004), a concerted response is required. Emergence of MDR and XDR are known to be facilitated by low levels of detection and inadequate treatment. From 2006 to 2010, it is reported that the incidence of XDR has risen from 1.5 percent to 4.5 percent (Hasan et al., 2010). This remains below the global average but has been shown to be on the rise. This trending of rise highlights a necessity for managing effective tuberculosis programs

[2] Together with Bangladesh, China, India and Indonesia, Pakistan accounts for 48 percent of all cases in the world (Dye, 2006).

in the country with high case detection rates and treatment completion rates with greater knowledge and attitudinal preparedness in the community.

In addition to a programmatic set of measures focusing on improving diagnostic capacities, access to treatment and follow up, community health literacy and mobilization to seek diagnosis and adopt prevention measures is a recognized and essential element of public health responses (Karim et al., 2009). A key concern in low resource environments, where financial constraints do not allow dispersion of facilities in every area, is to develop targeted programs with highly effective approaches to concentrate resources on high impact measures. For example, tuberculosis has a number of social determinants linked to higher risk of disease[3] which will be pivotal to concentrating resources on interventions with a promise of high impact. Community level knowledge of tuberculosis can vary by demographic factors (Hu, Peng and Wang, 2010) revealing essentially differential needs of target populations. The susceptibility is determined by host related and environmental factors. A number of factors accentuate the progression from exposure to infection to development of tuberculosis. At the biological level, the key factor remains the bacillary load in sputum. However, exposure itself is determined by exogenous factors and these act as precursors to creation of an infective situation. Targeted programs for motivating behavior change will be able to minimize exposure through tuberculosis literacy and effective treatment.

Some these exogenous risk factors like proximity to the case and social interaction (Acevedo-Garcia, 2001) cannot and should not be precluded but may spell needs for learning about transmission and steps for prevention. An essential part of the tuberculosis control strategy

[3] For example see Davies, (2005), Lienhardt, (2005), Shetty, etal., (2006), Tanrikulu, et al., (2008). de Alencar Ximenes et al., (2009); Narasimhan, et al., (2013)

is to minimize exposure and transmission. Contact among household members increases the risk of contracting tuberculosis (Verver, et al., 2004). The risk of Tuberculin Skin Test being positive is higher in first degree relatives compared with distant relatives (Lienhardt, et al., 2003), indicating that uncontrolled exposure favors transmission even if it does not progress to active disease immediately. Similarly, family history of tuberculosis has been assessed to be statistically significant risk factor for testing positive on smear test. All these factors can be built into community outreach programs providing specific guidance to prevent transmission. Delayed diagnosis leads to higher transmission to members of household and community (Narasimhan, 2013). This favors emphasis on recognizing symptoms. These factors provide sufficient scope to tuberculosis control for focusing special efforts on patients and their households. In addition to this, general tuberculosis literacy in the community will also play a role in enhancing rates of early detection and minimizing transmission.

Low literacy is in general associated with adverse health outcomes (DeWalt, et al., 2004). It contributes to low utilization of preventive care and suboptimal use of curative medicine (Berkman, 2011). In addition to general literacy, health literacy is specifically related to skills and capacities that can enable individuals to access healthcare and take appropriate decisions regarding their health (Nutbeam, 2008). Accessing and processing health information are the essential component of health literacy for decisions leading to interaction with health systems that can benefit individuals and community (Freedman, 2009). Health literacy may not only provide information on healthcare and what needs to be done but also on how care should be accessed and followed through for achieving desired health outcomes (Paasche-Orlow, et al., 2007). In this regard, tuberculosis control will find it hard to achieve success without comprehensive health literacy initiatives in the community which can modulate behaviors at

individual and household levels. At the same time to accentuate effects through targeting resources on high impact interventions, there is a need to build evidence on how health literacy relates to accessing healthcare and achievement of health outcomes. This evidence can provide guidance to investment decisions for health literacy programs aiming to have an impact on health outcomes (Chinn, 2011).

We argue that tuberculosis literacy builds readiness in the community to seek diagnosis and treatment. It also propels appropriate behavior to prevent transmission. Indirect evidence suggests that learning about the disease leads to behavior change. For example, individuals with exposure to tuberculosis treatment are more likely to adopt appropriate health seeking behavior (Abebe, et al., 2010). Although this indicates another channel for information flow, this slow seepage of information cannot be a dependable source of building tuberculosis literacy in a community to generate action for diagnosis, treatment and prevention. This is also not attributable to communication efforts but results from patients going through the treatment regimen and possibly serving as conduits for flow of information. It also suffers from another constraint where patients with low literacy skills may be at a comparative disadvantage to seeking care from the health system (Sabir and Hassan, 2013) and becoming conduits of information for their households.

Intervention based approaches have been tried to bring up levels of health literacy of tuberculosis and in experimental settings even short term interventions have been productive.[4] Several methods have been used for health communication to change behavior.[5] Such interventions have had variable effects on knowledge, healthcare utilization and adherence

[4] For example see Wright, (2013). Similarly, in other behavior change strategies (Briscoe and Aboud, 2012) which can be applied to tuberculosis.
[5] Some of these are reflected in Hinyard and Kreuter, (2006).

(Pignone et al, 2005; Berkman, et al., 2011). There is not straightforward translation of knowledge into health seeking behavior. It can only be argued that health seeking is built upon literacy through various stages of preparation leading to accessing healthcare (Prochaska and Velicer, 1997). There is not much evidence on to what extent of knowledge leads to formation of intention to change behavior. But some quantum of knowledge can lead to formation of intention to change behavior. Experimental evidence suggests that a large change in intention leads to modest behavior change (Webb and Sheeran, 2006). In this regard, a long term study with appropriate data collection could provide evidence on the extent to which investments in health literacy relating to tuberculosis in the community leads to effects on case detection rates and changes in incidence. In our limited time setting, we could not carry out longer term data collection. Therefore, this evaluation focused on intermediate outcomes of changes in level of health literacy.

An assessment of tuberculosis literacy in the tribal communities was undertaken to assess how far the efforts of the TB Control Program have penetrated the tribal communities. The extent of this penetration was assessed in the following six dimensions: (i) symptoms: knowledge and recognition of symptoms of tuberculosis; (ii) transmission: it is a communicable disease but spreads through inhaling droplets containing the bacterium; (iii) cure: knowledge that tuberculosis is curable and that the cure is available at the TBCP centers; (iv) necessity of treatment: tuberculosis is a serious ailment requiring treatment; (v) therapy: efficacious treatment comprises 6 months of a drug regimen; (vi) attitudes toward tuberculosis: whether it generates debilitating fear or action to seek care. Competing explanations for (ii), (iii), (iv) and (v) are possible and prevalent in the community, often complicating tuberculosis control efforts. Some of these competing explanations often generate alternative knowledge and practices working as a

barrier to diagnosis and treatment. Hence tuberculosis related health literacy is not only an absence of knowledge but it can be presence of alternative beliefs. The presence of such beliefs militates against acquisition of correct information and may also serve as an active barrier. During assessment, therefore, alternative beliefs were also tested.

For each of these dimensions of health literacy, a set of questions were developed. Table 1 shows the questions under each dimension. The World Health Organization uses 9 conditions as possible symptoms of tuberculosis. The subjects were asked if they could recognize all or any of the symptoms.

Table 1 Dimensions of Health Literacy of Tuberculosis

#	Dimension	Questions
1	Tuberculosis as a Serious Condition.	Section 8. TB Knowledge and Awareness, Q.8; Q.11; Q.12 Q.8 on page 5
2	Symptoms: knowledge and recognition of symptoms of tuberculosis	Section 8. TB Knowledge and Awareness, Q.3
3	Transmission: it is a communicable disease but spreads through inhaling droplets containing the bacterium	Section 8. TB Knowledge and Awareness, Q.4; Q.5; Q.10
4	Cure: knowledge that tuberculosis is curable, therapy is for 6 months and that the cure is available at the TBCP centers	Section 8. TB Knowledge and Awareness, Q.8; Q.12, page 12 Q.11 on page 3 . TB Knowledge and Awareness, Q.9 Section 8. TB Knowledge and Awareness, Q.2 [TB disease is 100%... on page 4]
5	Necessity of treatment: tuberculosis is a serious ailment requiring treatment;	8. TB Knowledge and Awareness, Q.2 Q.9 on page 3
6	Attitudes toward TB	TB attitude and care seeking behavior 1, 2, 3, 4, 5, 6, 7

Methodology

The TB Control Program is being implemented all 7 agencies and 6 regions of FATA. The outreach activities to build legal literacy on tuberculosis have been carried on throughout these regions. At the time of the survey, in September 2014, some of the areas were not accessible due to militancy or ongoing military operations of the Government of Pakistan in these areas. As a results, only 6 agencies and 3 regions were deemed accessible in consultation with local authorities.

FATA was documented to have 2450 villages in the last population census carried out in 1998. Some of these villages move over time as households groups that comprise a village move to a different location with their area. The population is not nomadic in most cases with the exception of *powindas* in South Waziristan where seasonal migration is a practice. Relocation of villages over time is due to agricultural reasons or realignment for gaining better access to roads. Up to date information on the location of villages was not available. A sample of 121 villages was drawn up for all the accessible areas of FATA, using the census list of villages. The survey teams were instructed to follow the villages in their relocations where this was necessitated. In all 17 villages were found to be relocated or inaccessible. In all these cases, a neighboring village within walking distance was used as replacement. The sample villages and the ones which were found to be relocated are shown in in the Annex in Table A.1.

Current information on the village population was not available. In the introductory meeting on arrival of the survey team, information was collected about the total number of households in the village. Five percent of these total households was used as a sample in each village. . The survey teams selected the first household using a random direction after contacting

a local resident and introducing the purpose of their visit in line with the tribal traditions. Each household was identified to be the larger family living in close vicinity in a house or group of attached houses. In line with the tribal welcome, they went door to door to reach the selected households or where they were advised to stay in the hujra or the tribal meeting place, the members from the selected households were invited for the interview. The subjects were interviewed individually in both cases by administering the survey questionnaire. The survey questionnaire was administered to the subjects in each of the 121 villages. All subjects were interviewed in face to face interviews in local Pushtu dialects of the tribal areas. This was arranged to ensure minimum barriers in communication.

Data Collection and Validation

As explained above, a random sample of villages was drawn for all rural conurbations of FATA with one exclusion due to security situation. Sampling was carried out in three steps. In the first step, a list of all the villages in FATA was developed using the villages recognized as entities in the 1998 population census and from this list the North Waziristan village were excluded due to obtaining security situation and inaccessibility. This resulted in a list of 2,450 villages. In the second step, using the RAND Command in MS Excel a list of 121 villages was created. The resulting sample of the villages and its distribution across the 6 agencies and 3 FR regions is as follows:

Table 2: Number of Villages Selected in each Agency and FR

S No.	Agency	Number of Villages Selected
1	Bajaur Agency	33
2	Khyber Agency	19
3	Kurram Agency	15
4	Mohmand Agency	16
5	Orakzai Agency	20
6	South Waziristan Agency	15
7	FR Region	3
Total		121

In the third step, the estimated population of the villages was divided by 9, the average household size in FATA, to estimate the number of households in the village. Then a 5 percent sample of households was calculated for each village. In order to cater to non-response and sample attrition, the minimum responses in each villages was aimed at 5 households.

The survey was conducted in the last two weeks of April 2015. This allowed sufficient time for dissemination of pamphlets in the villages. The survey elicited responses of the survey subjects, randomly selected from the village. In 82 villages out of the 121 villages, where pamphlet distribution had taken place around three weeks earlier, subjects replied that they had

seen the pamphlet. Only in 2 villages where distribution had taken place, no subject replied in the affirmative. This shows that the method of distribution worked and the bundles of pamphlets were distributed further in the village households.

Data collection was carried out through face to face interviews. Due to the security situation, the majority of enumerators were males and therefore in respect of tribal traditions, they could not seek to interview females. This places a constraint on the data and the results. At the same time, in the tribal setting of FATA, it is male members of the household who are influential in decisions whether to seek healthcare or not. Therefore, the survey picking up data on male members of the household provides a first line of information and if health literacy of tuberculosis responds to communication interventions.

The survey was conducted from 18 to 25 April, 2015. The survey teams visited all the 121 villages in the study. The subject responses were recorded in forms which were checked by the supervisors. The data were entered in excel and rechecked for accuracy.

To further establish the integrity of the process, a validation exercise was carried out. The FATA Directorate of Monitoring and Evaluation was provided the survey dates and schedules. The Directorate carried out site visits in Mohmand Agency, Orakzai Agency and Bajaur Agency. In case of all other agencies, a sample of subjects were randomly called to verify the survey teams visits and their responses.

Health Literacy Intervention

The exposure to communication efforts made in the past was unknown. The program records do not show a systematic organization or regional foci. The baseline survey data shows

that the villages randomly assigned to three arms do not demonstrate any major differences in any of the 5 dimension of health literacy of tuberculosis.

Given the security situation in FATA, people are reportedly not comfortable receiving calls from unknown phone numbers. Individuals are reluctant to share cell numbers with strangers. During the baseline survey of the villages, the survey teams could only obtain 158 phone numbers from 41 villages. Cellphone messaging therefore was not practicable. As a result, this approach was abandoned. Sending advocates to enhance health literacy of tuberculosis was also fraught with differential access to villages.

Keeping the above constraints in view, a health literacy intervention using printed pamphlets was implemented aiming to build a higher understanding of tuberculosis and produce an effect on health literacy of the communities and ultimately on CDR. The intervention comprised distribution of pamphlets in Urdu in the villages. The information on the pamphlet had the same content but the presentation had two variants as follows:

A. A pamphlet with a narration of symptoms of tuberculosis and pictures. It contained information on how tuberculosis spreads, that it is treatable in 6 months using DOTS, it can be diagnosed and treated at government facilities designated for this purpose, what are the 4 commons symptoms of tuberculosis, namely cough lasting more than 2 weeks, blood in sputum, fever with night sweats and weight loss.
B. A pamphlet with the narration of symptoms as above but also had pictures to explain some of the narration. In addition to this narration, it had pictures as follows: (a) Picture 1 showing a doctor with the free treatment message; (b) Picture 2 showing laboratory with

the diagnosis message; (c) Picture 3 showing a TB clinic board; and (d) Picture 4 showing coughing, seating and weight loss with the symptoms message.

Each village in groups A and group B received approximately 25 pamphlets. These were distributed from March 26 to 30, 2015. The method of distribution was where a two member team visited the village and identified the elder in the village. The team gave all the 25 copies of the pamphlet to the village elders, young adults, school teachers or randomly chosen households. The pamphlet distributions took place mostly at 'hujras', the traditional community meeting places for men. In other villages, the pamphlets were left in the mosque, the village school, the house of an influential or distributed in the markets or playgrounds. The further distribution of pamphlets was left to the first recipients. The visiting teams left instructions for distribution of the pamphlets in the village. Given the low literacy ratios in the villages, reading over the pamphlets was an expected method of transfer of information. In all 2,074 pamphlets were distributed in 84 villages spread across all the 6 tribal agencies and 3 FRs. The average number of pamphlets distributed was 24.69 per village. The detailed distribution report is placed at Annex II.

Although only the villages in Groups A and B received pamphlets it was found out during the survey that TBCP itself may have distributed pamphlets in some areas. There are chances that some of the villages may have 'contamination' from this distribution.

Sample Characteristics and Descriptive Statistics

The sample includes 612 men and one women, a total of 613 individuals randomly selected from each of the 121 villages. Figure 1 shows the geographic distribution of the sample. The survey respondents were distribution over a wide range of age starting from 10 years and

going up to 80 years. The majority of the respondents were in the range of 20 to 35 years (Figure 2). Around one-fourth of the survey respondents had no education, providing a good measure of dissemination through reading over method. There was representation of different levels and types of education including religious education (Figure 3). A quarter of the sample was engaged in farming and a similar number was in business. Employed individuals were 20 percent of the sample while the remaining did not identify a specific profession (Figure 4). Radio, TV and printed material were reported in the descending order of importance as sources of health information (Figure 5).

Distance to a health facility in this area would be an important factor influencing access to information as well as to diagnosis and treatment. Figure 6 shows the distance to the nearest health facility of the sample respondents. A total of 51 percent of the respondents lived within 5 kilometer travel distance from the nearest health facility. This percentage rises to 67 percent for the travel distance of 10 kilometers travel time to a health facility. Given the underdeveloped road networks and transport system laid on a mountainous terrain, these distances are not comparable to urban distances. In the sample, 19 percent of the respondents reported living at least 20 kilometers from the nearest health facility. Distance to the health facility or to the tuberculosis management unit is an important determinant of access and utilization of the services provided by the TB Control Program. This is later used as a control variable in the analysis.

Knowledge of TB Control Program. The survey explored the knowledge people have about the existence of the program in the tribal areas. A high percentage of 45 percent expressed no knowledge of the program (Figure 7). Around one-third of the respondents knew about that the

FATA health facilities of TBCP were providing free of cost medicines for treatment of tuberculosis. The remaining had partial knowledge but laced with misconceptions about payments being charged for the medicines (Figure 8). Further highlighting the need for communication, 48 percent of the respondents reported that no TB program from the government existed in FATA (Figure 9). Another 20 percent were only aware of TB treatment being available at private health clinics. More than half of the sample had knowledge of free availability of drugs at the treatment centers (Figure 10).

The data showed the following levels of health literacy of tuberculosis aligned on the six dimensions:

Dimension 1: Tuberculosis as a Serious Condition. In order to seek diagnosis when mandated and follow the treatment regimen, to adopt measures to interrupt transmission of infection and to adopt preventive measures, it is important that tuberculosis is recognized as a serious health condition.[6] If it is not understood to be as serious malady, it will not receive attention in the community, from the household and from the individuals. Figure 11 shows that 58 percent of the respondents recognized it as a very serious health condition.

Dimension 2: Knowledge and recognition of TB symptoms. If symptoms are recognized, seeking early and appropriate diagnosis may become the next step. Without knowledge of symptoms, seeking healthcare may be delayed or may not take place. In case of FATA, a large number of patients arrive at TB Centers upon referral from other health facilities. Figure 12

[6] The case fatality for tuberculosis is at 3.8 to 5 percent of patients under treatment (Fielder, et al. 2002; Dye, et al., 2013). It is as high as 9 percent in co-morbidity with HIV (Straetemans, et al., 2011).

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shows that the symptoms are not well recognized among the population in FATA. After the intervention, there was a higher recognition of the common or more advanced stage symptoms.

Dimension 3: Mode of Transmission. This was recognized by 53 percent of the respondents showing high level of recognition. Figure 13 shows that misconceptions also exist among the population about mode of transmission of tuberculosis. Fairly high percentages of the respondents viewed sharing of dishes or handshake to act as modes of transmission. These misconceptions are more than innocuous. They can become the basis for shaping community and household responses to tuberculosis patients and their management. Since mostly community care will be adopted for these patients, these attitudes can have a pernicious impact and vitiate the quality of support available to patients. In Figure 14 the persons at risk show a similar pattern. While it is true that the household members are at a higher risk of infection, the remaining groups may or may not be at risk. The recognition of other groups as at risk again points to misconceptions that can have adverse effects on community responses to patients and community care. This knowledge base continues into preventive steps as reported in Figure 15. Around 56 percent correctly recognize the manner of preventive care to be adopted for pulmonary variety of the disease.

Dimension 4: Cure, Availability of Treatment. One of the key features of the TB Control Program in FATA is its continuing attempts to provide curative services at of its 27 centers. Knowledge that the treatment is available at the agency level is important to shaping up health seeking behavior. Figure 16 demonstrates that this knowledge is available in 55 percent of the respondents. Another aspect of health literacy of tuberculosis is the clear conception of what type of treatment is effective in curing tuberculosis. The respondent replies are shown in Figure 17

and it appears as a variegated picture. Almost 73 percent know that tuberculosis is treated with drugs and in a minority of these cases, the exact treatment is also known. The lack of this belief in the remaining is important too. All the remaining respondents believe in alternative treatments which do not have a sound evidence or any medical basis. Such competing beliefs in case of long duration treatment can lead to interruption of treatment or abandonment. Predicated on the belief that tuberculosis is curable, 50 percent of the respondents identified the correct period of effective treatment in ordinary cases of the infection (Figure 18).

Dimension 5: Necessity of Treatment. Figures 19 and 20 summarize the respondents' views on what to do if someone has tuberculosis symptoms. A majority view the need to access medical care as necessary. A smaller but still significant majority expressed readiness to access care immediately. These reported attitudes are important as they guarantee early establishment of treatment regimen and lower risk of transmission. Both these dimensions of health literacy indicate that there is recognition of necessity of treatment. Figure 27 in a similar line of inquiry establishes the readiness of respondents to access appropriate healthcare if they had symptoms requiring medical attention. Respondents also identified possible barriers to accessing care and these are summarized in Figure 21. Financial constraints and low trust in quality of care stand out as the major barriers.

Figures 22 and 23 report knowledge of presence of patients in the community and status of their treatment. The knowledge of patients is a possible confound to our treatment as source of information. .

Dimension 6: Attitudes toward Tuberculosis. These are important in creating acceptance and comfort in which `individuals and households can decide to access diagnostic and curative

services. They also shape up community responses to community management of patients during treatment. In this attitudinal aspect, they contribute to case detection rates and treatment completion rates. Figures 24 and 25 depict perceptions of vulnerability and fear of infection. This carries into Figure 26 indicating that high percentages of respondents express possible shame, surprise, and fear as the preliminary emotions if they were diagnosed with the disease. It is important to note that whereas a short intervention led to higher scores on other dimensions, the deeper attitudes toward disease did not achieve such success.

Analysis and Results

To test the success of random assignment of villages to treatment and control arms, we report key variables for each group in Table S. The table shows that there are only minor variations across the three arms and in these parameters the groups are comparable.

We analyzed the data using OLS, Probit, Logit and Multinomial Logit models. They main results are summarized in Table S1 to Table S6. These results report the coefficients on the treatment variables only. The regressions were then repeated with addition of a set of control variables. These results are not materially different from Tables S1 to S6 and reported in Tables C1 to C6. In each case, the treatment variables were one of the four, namely, receipt of one of the two types of pamphlets, with or without pictures, receipt of any type of pamphlet, self-reported receipt of pamphlet and the number of pamphlets per household in the village. The last variable was constructed by dividing the total number of pamphlets given out in a village by the number of households in the village. The detailed regression results are given in Annex III. The detailed tables are for the summarized Tables C1 to C 6, with controls.

One of the key messages contained in the pamphlets was recognition of tuberculosis symptoms. This is deemed to be essential in building community health literacy of tuberculosis on the basis of which further knowledge, attitudes and practices can be ordered to improve CDR and TSR. When individuals are expected to adopt preventive measures in households with tuberculosis patients or in public settings in shared spaces with patients, recognition of symptoms is the trigger to commission appropriate responses.

The recognition of tuberculosis symptoms was estimated as OLS and multinomial logit models. The results are reported in Table S1. Recognition of no symptom was chosen as the referent response. All other symptoms, 1 to 9 were estimated with reference to recognition of no symptoms. Symptoms are coded as (1) cough for two or more than two weeks; (2) blood with cough or in sputum; (3) weight loss; (4) shivering due to fever; (5) sweating at night; (6) pain in chest; (7) fatigue or weakness; (8) loss of libido; (9) fever. At number (10) was the option to check if the respondent indicated that none of the above was a TB symptom. Except number 8, all other are either directly mentioned in the pamphlet or are close enough to the words in the pamphlet. The coefficients on the treatment variables, as estimated for recognition of each symptom with reference to recognition of no symptom, are reported in columns labelled for each symptom. Receipt of any pamphlet by the village and self-reported receipt of pamphlet show that recognition of symptoms gained with coefficients positive and statistically significant. The latter has a higher effect as would be expected in this case of treatment effect on the treated. As robustness check, the referent response was changed to symptom 1 and these results are reported in Table C1. The results remains essentially the same with the only exception of the recognition of symptom option 10 which is a rejection of all symptoms as relevant to tuberculosis. Pamphlet with pictures and pamphlets received per village household show that the recognition of all

symptoms compared with recognition of no symptom did not make any gains. For self-reported pamphlets received, the results show gains in symptom recognition for different comparisons.

The effects of treatment on other dimension of health literacy of tuberculosis were estimated as OLS, Probits and Logit models. The OLS estimates in Table S2 show that the effect on health literacy of tuberculosis is demonstrated for some aspects and under some constructions of the treatment. Different dimension of health literacy of tuberculosis were tested. These dimensions, as dependent variables in each case, were (i) seriousness of TB; (ii) transmission of TB; (iii) infection of TB; (iv) availability of cure for TB; (v) protection from TB; (vi) presence of government program for TB in FATA; (vii) duration of treatment to cure TB; (viii) what to do if someone had TB symptoms; and (ix) if TB symptoms, when to health facility. Along these nine dimensions of health literacy, a range of knowledge, attitude and practices are identified. The treatment variable for pamphlet with pictures is positive and significant at 10 percent level for the duration of treatment to cure tuberculosis. When the treatment is assessed using the self-recognition of receipt of a pamphlet, the results improve significantly in 5 out of 9 dimensions where the coefficient on the treatment variables becomes positive and statistically significant. This indicates, that in the 4 to 6 weeks after dissemination of pamphlets in the treatment villages, the most effective gains in literacy came from direct reading of a pamphlet. This could include the pamphlet being read to the respondent. When the model is estimated using pamphlets per household, as a measure of dose concentration, the readiness to visit a health facility after recognition of tuberculosis symptoms becomes positive and statistically significant at 10 percent level. The results were stable to addition of controls.

The analysis of the effects of health literacy promoting treatment on knowledge, attitude and practices relating to tuberculosis was carried out using probit. The results are reports in Table S3. The results are essentially similar to the OLS models with slight improvement. Again the treatment pamphlet with pictures results in a higher probability of learning the correct duration of treatment required to cure tuberculosis. When the treatment variable is defined as the self-reported receipt of a pamphlet, the health literacy of tuberculosis gains in 5 out of 9 dimensions of knowledge, attitude and practices. The results show a positive coefficient that is statistically significant for learning of infection of TB, availability of cure for TB; means of protection from TB, presence of government program for TB in FATA, correct duration of treatment to cure TB, what to do if someone had TB symptoms and if someone had tuberculosis symptoms, when to go to health facility. Given the low cost of treatment with its feasibility in low resource environments, these gains are important in building the prerequisite of health literacy for accessing care, completing treatment and preventing transmission. With treatment variables defined as any pamphlet received in the village and pamphlets per number of village households, the readiness variable for accessing healthcare upon recognition of symptoms, shown in the last column, is positive and statistically significant at 10 percent level. The only negative coefficient is seen on what to do if there are tuberculosis significant is in case of self-reported receipt of pamphlets. This indicates that the treatment did not result in creating sufficient clarity on a response which is perhaps embedded in social taboos. The marginal effects of the probit regression were computed and reported in Table S4. Again the results remained essentially stable to addition of controls.

The models were re-estimated using logit regression and the results are reported in Table S5. The results are similar to Table S4 with slight gain in the size of coefficients. The odd ratios

have been reported in Table S6. The logit estimations with addition of controls are reported in Table C5. The essential results are stable to change in specifications.

Conclusion

This evaluation has broken a new path in practice of disease control in FATA. It carried out a population survey to generate erstwhile non-existent data on health literacy of tuberculosis. We also create a 6-dimensional framework for assessment of knowledge, attitude and practices pertaining to tuberculosis and adopt it for evaluation of a morbidity and mortality reduction program in the area. This distinction is essential to focusing scarce resources on key variables for higher effects in disease control. The health literacy intervention is implemented in a randomized controlled trial to test the effectiveness of a feasible method of building tuberculosis literacy in the population which is hard to reach under typical communication tools. Health literacy of tuberculosis, the outcome variable of interest, is an intermediate variable correlated with programmatic success variables of case detection rates, treatment completion rate and cure rate. Due to time constraint, it was not possible to take measures on the programmatic outcome variables. The survey had a shortcoming that it could not reach the females in the tribal households. As a next step, it would be important to find out if tuberculosis literacy through this method is reaching females as well.

We have carried out a 6-dimensional analysis of health literacy of tuberculosis as preparatory step toward increase in case detection rates, treatment completion rates and cure rates. Through a simple, feasible and affordable intervention, the effects on intermediate variables of interest in the domain of health literacy of tuberculosis have been evaluated. The results show that within a short span of 4 to 6 weeks after application of treatment, the couriered

pamphlets produced positive gains in health literacy. The most important gains were made in recognition of tuberculosis symptoms, mode of transmission, methods to adopt protection, duration of effective treatment, existence of government tuberculosis control program and when to seek treatment. The treatment was designed to test efficacy of health literacy intervention in a low literacy and hard to reach area. The results provide encouraging support to adoption of communication strategies to build health literacy in an area where tuberculosis incidence is reportedly high but recognition of symptom and knowledge of diagnostic facilities and availability of treatment is low.

Four evaluation questions were set out, namely (1) what is the effectiveness of TBCP's advocacy program and adherence with treatment regime/completion of full TB course for treatment and thus prevention of MDR and XDR cases; (2) how the existing communication and advocacy strategy can be improved to enhance CDR in the FATA; (3) what is the impact of the TB control program on the perception of tribal people (both TB patients and General Public) with reference to trust in state; and (4) what is the extent of prevalence of co-infection of TB and HIV in the FATA region. As discussed earlier, the Question 4 was dropped due to unavailability of data.

On the remaining particular evaluation questions, we can conclude by saying that the effectiveness of TBCP's advocacy effectiveness is low. The program had only reported data on adherence and therefore no independent conclusion could be ascertained on the second part of this question. For an improvement on existing communication and advocacy strategy, the intervention has shown promising results. It can be further developed and used to improve CDR. The indirect evidence shows that there is mixed views on people's general perceptions about TB

control and what the government is doing in FATA. The results show that the interventions resulted in improvement in people's perceptions.

Further work will be required to design the health literacy interventions with perspicacity to differentially affect knowledge, attitude and practices and test their effects on case detection rates and treatment completion rates. The concentration of intervention will need to be further explored to identify optimal levels for creating and sustained community support for accessing diagnostic and curative services. This is necessary as tuberculosis strikes in low resource environments and preys upon already frail household resources. Higher levels of community support are also needed to sustain adherence with treatment regimen over time and prevent emergence of MDR and XDR tuberculosis.

References

Abebe, G., Deribew, A., Apers, L., Woldemichael, K., Shiffa, J., Tesfaye, M., ... & Colebunders, R. (2010). Knowledge, health seeking behavior and perceived stigma towards tuberculosis among tuberculosis suspects in a rural community in southwest Ethiopia. *PLoS One*, *5*(10), e13339.

Acevedo-Garcia, D. (2001). Zip code-level risk factors for tuberculosis: neighborhood environment and residential segregation in New Jersey, 1985-1992. *American Journal of Public Health*, *91*(5), 734.

Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low health literacy and health outcomes: an updated systematic review. *Annals of Internal Medicine*, *155*(2), 97-107.

Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., Viera, A., Crotty, K., ... & Viswanathan, M. (2011). Health literacy interventions and outcomes: an updated systematic review.

Briscoe, C., & Aboud, F. (2012). Behaviour change communication targeting four health behaviours in developing countries: a review of change techniques. *Social Science & Medicine*, *75*(4), 612-621.

Butt, T., Ahmad, R. N., Kazmi, S. Y., & Rafi, N. (2004). Multi-drug resistant tuberculosis in Northern Pakistan. *Journal of Pakistan Medical Association*, *75*, 10.

Chinn, D. (2011). Critical health literacy: A review and critical analysis. *Social Science & Medicine*, *73*(1), 60-67.

Davies, P. D. (2005). Risk factors for tuberculosis. *Monaldi Arch Chest Dis*, *63*(1), 37-46.

de Alencar Ximenes, R. A., Souza, W. V., Montarroyos, U. R., Diniz, G. T., Luna, C. F., & Rodrigues, L. C. (2009). Is it better to be rich in a poor area or poor in a rich area? A multilevel analysis of a case–control study of social determinants of tuberculosis. *International Journal of Epidemiology*, dyp224.

DeWalt, D. A., Berkman, N. D., Sheridan, S., Lohr, K. N., & Pignone, M. P. (2004). Literacy and health outcomes. *Journal of General Internal Medicine*, *19*(12), 1228-1239.

Dye, C. (2006). Global epidemiology of tuberculosis. *The Lancet*, *367*(9514), 938-940.

Dye, C., Glaziou, P., Floyd, K., & Raviglione, M. (2013). Prospects for tuberculosis elimination. *Annual Review of Public Health*, *34*, 271-286.

Freedman, D. A., Bess, K. D., Tucker, H. A., Boyd, D. L., Tuchman, A. M., & Wallston, K. A. (2009). Public health literacy defined. *American Journal Of Preventive Medicine*, *36*(5), 446-451.

Fielder, J., Chaulk, C., Dalvi, M., Gachuhi, R., Comstock, G., & Sterling, T. (2002). A high tuberculosis case-fatality rate in a setting of effective tuberculosis control: implications for acceptable treatment success rates. *The International Journal of Tuberculosis and Lung Disease*, *6*(12), 1114-1117.

Hasan, R., Jabeen, K., Ali, A., Rafiq, Y., Laiq, R., Malik, B., ... & Hasan, Z. (2010). Extensively drug-resistant tuberculosis, Pakistan. *Emerging Infectious Diseases*, *16*(9), 1473.

Hinyard, L. J., & Kreuter, M. W. (2006). Using narrative communication as a tool for health behavior change: a conceptual, theoretical, and empirical overview. *Health Education & Behavior*.

Hu, J. S., Peng, Y., & Wang, J. (2010). Investigation on Current Status of Health Knowledge and Health Literacy among Urban and Rural Residents in Changsha in 2009. *Practical Preventive Medicine*, *3*, 087.

Karim, S. S. A., Churchyard, G. J., Karim, Q. A., & Lawn, S. D. (2009). HIV infection and tuberculosis in South Africa: an urgent need to escalate the public health response. *The Lancet*, *374*(9693), 921-933.

Lienhardt, C., Fielding, K., Sillah, J., Tunkara, A., Donkor, S., Manneh, K., ... & Bennett, S. (2003). Risk factors for tuberculosis infection in sub-Saharan Africa: a contact study in The Gambia. *American journal of respiratory and critical care medicine*, *168*(4), 448-455.

Lienhardt, C., Fielding, K., Sillah, J. S., Bah, B., Gustafson, P., Warndorff, D., ... & McAdam, K. (2005). Investigation of the risk factors for tuberculosis: a case–control study in three countries in West Africa. *International Journal of Epidemiology*, *34*(4), 914-923.

Narasimhan, P., Wood, J., MacIntyre, C. R., & Mathai, D. (2013). Risk factors for tuberculosis. *Pulmonary Medicine*, *2013*.

Nutbeam, D. (2008). The evolving concept of health literacy. *Social Science & Medicine*, *67*(12), 2072-2078.

Paasche-Orlow, M. K., & Wolf, M. S. (2007). The causal pathways linking health literacy to health outcomes. *American Journal of Health Behavior*, *31*(Supplement 1), S19-S26.

Pignone, M., DeWalt, D. A., Sheridan, S., Berkman, N., & Lohr, K. N. (2005). Interventions to improve health outcomes for patients with low literacy. *Journal of General Internal Medicine*, *20*(2), 185-192.

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion*, *12*(1), 38-48.

Sabir, S. A., & Hassan, F. (2013). Improving health literacy in Pakistan--" a new oil in old lanterns". *JPMA. The Journal of the Pakistan Medical Association*, *63*(4), 539-539.

Shetty, N., Shemko, M., Vaz, M., & D'souza, G. (2006). An epidemiological evaluation of risk factors for tuberculosis in South India: a matched case control study. *The International Journal of Tuberculosis and Lung Disease*, *10*(1), 80-86.

Straetemans, M., Glaziou, P., Bierrenbach, A. L., Sismanidis, C., & van der Werf, M. J. (2011). Assessing tuberculosis case fatality ratio: a meta-analysis. *PLoS One*, *6*(6), e20755.

Tanrikulu, A. C., Acemoglu, H., Palanci, Y., & Dagli, C. E. (2008). Tuberculosis in Turkey: high altitude and other socio-economic risk factors. *Public Health*, *122*(6), 613-619.

Verver, S., Warren, R. M., Munch, Z., Richardson, M., van der Spuy, G. D., Borgdorff, M. W., ... & van Helden, P. D. (2004). Proportion of tuberculosis transmission that takes place in households in a high-incidence area. *The Lancet*, *363*(9404), 212-214.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, *132*(2), 249.

Wright, S. C. (2013, November). A DVD intervention to improve the tuberculosis related knowledge and practices of adults with low literacy: a quasi-experimental design. In *42nd Biennial Convention (16 November-20 November 2013)*. STTI.

Figures

Figure 1 Sample Distribution over Geography

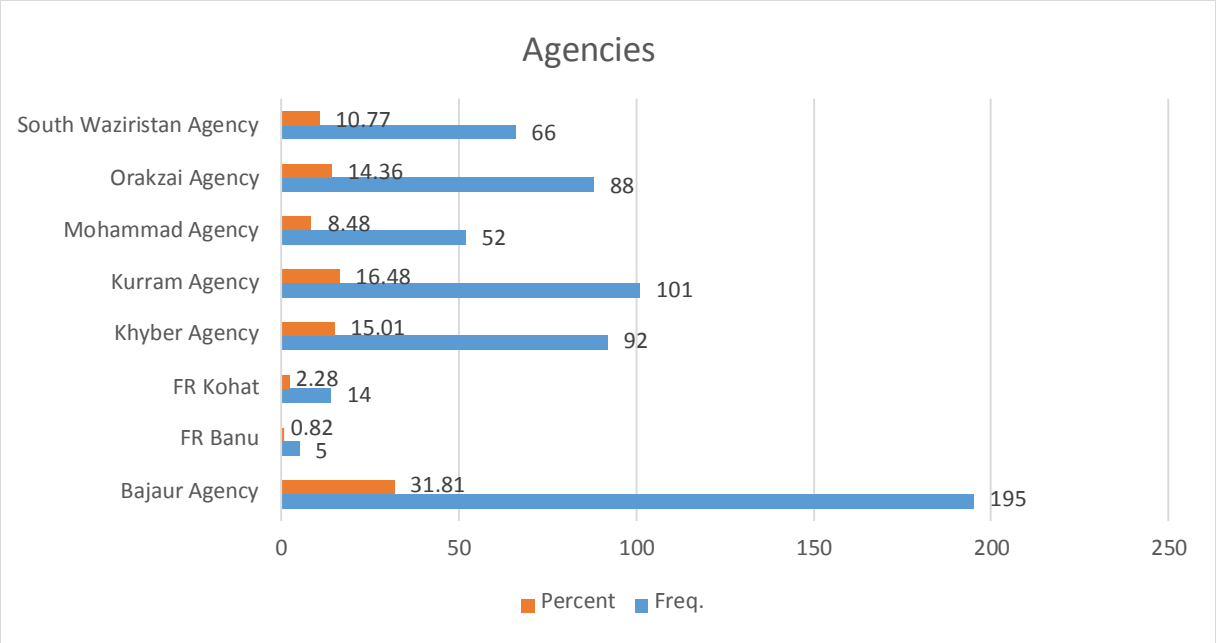


Figure 2 Sample Composition by Age

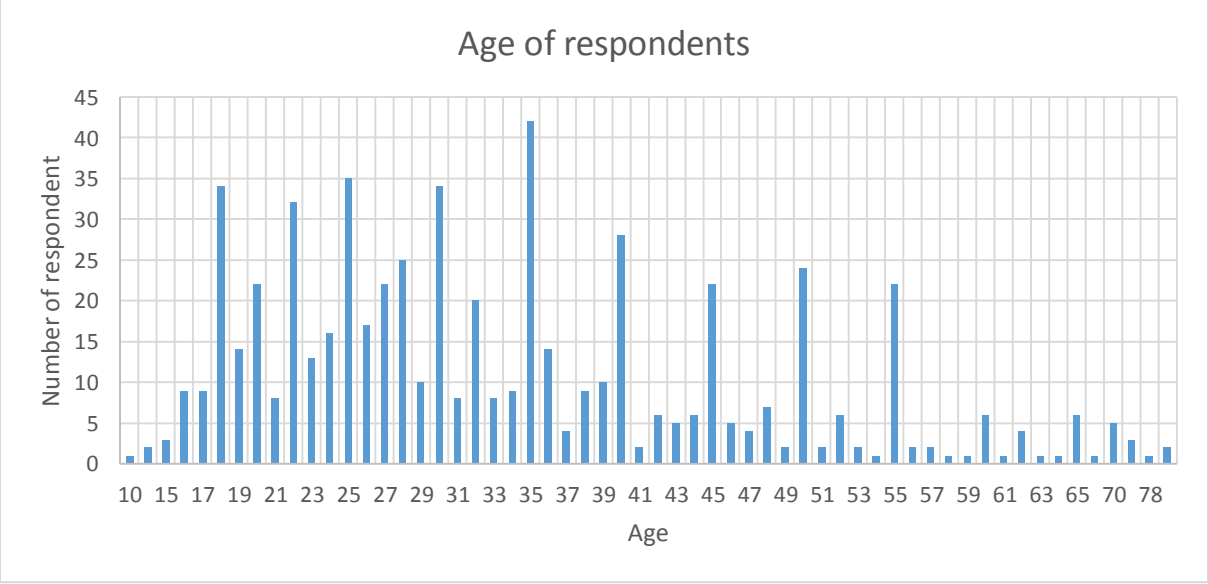


Figure 3 Sample Composition by Education

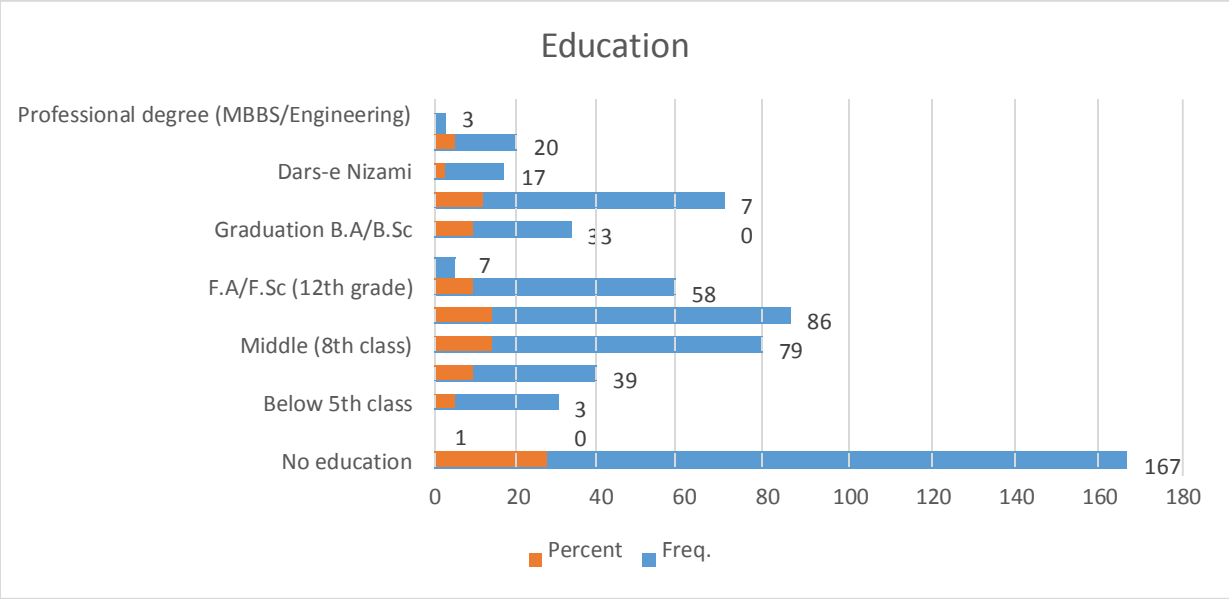


Figure 4 Sample Composition by Profession

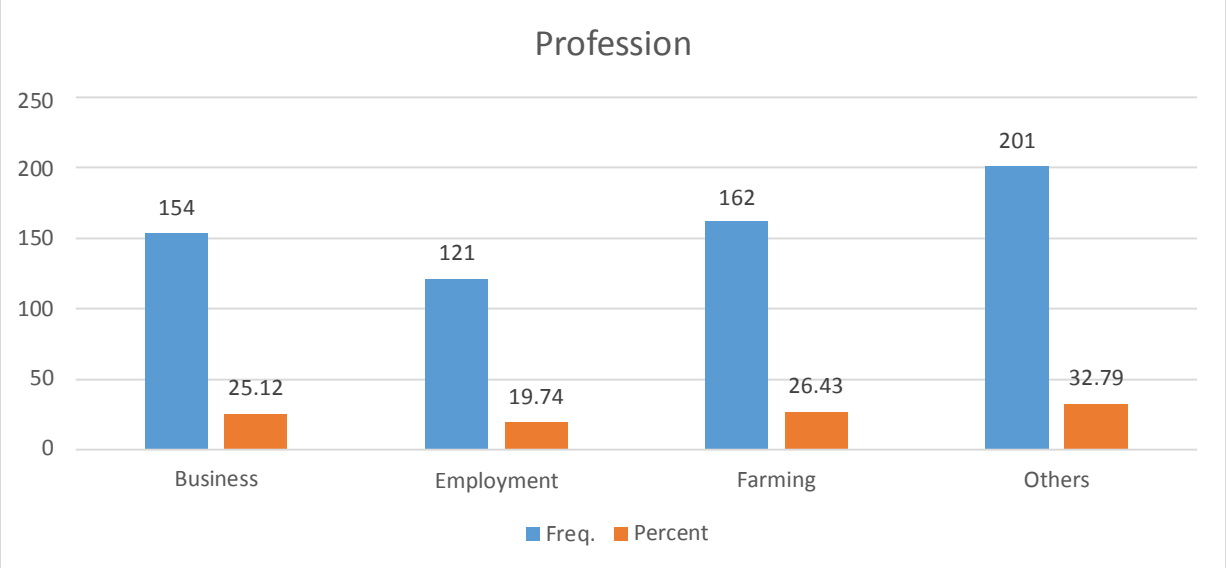


Figure 5 Use of Media

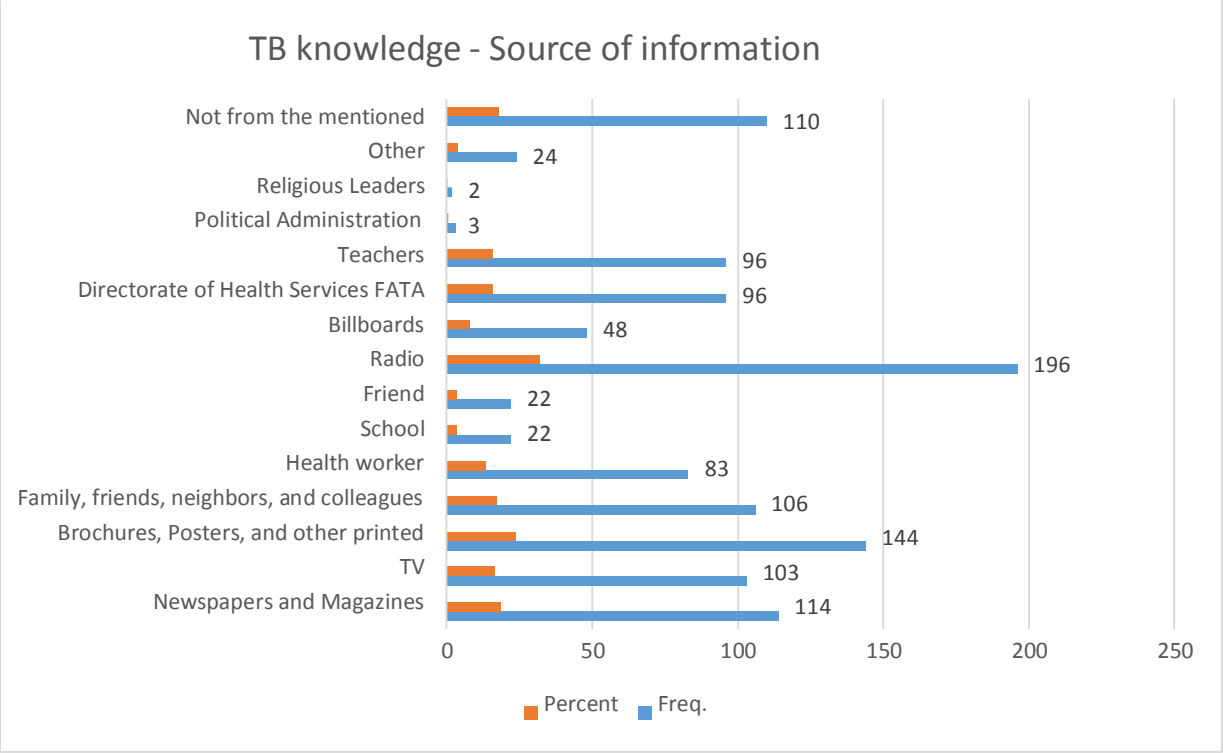


Figure 6 Distance to the nearest health facility

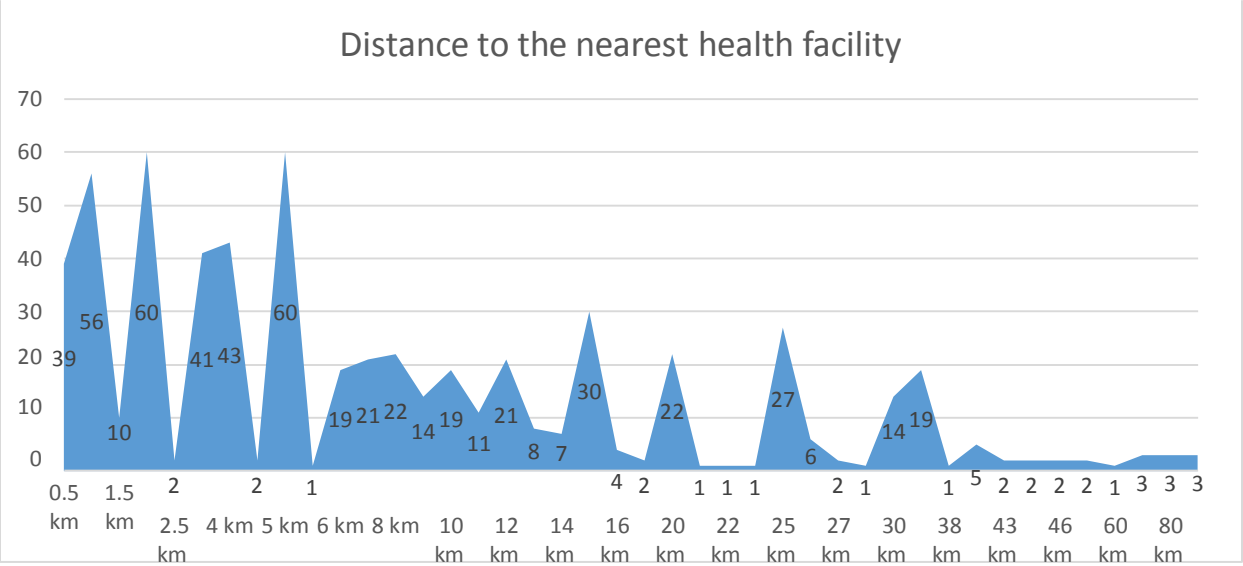
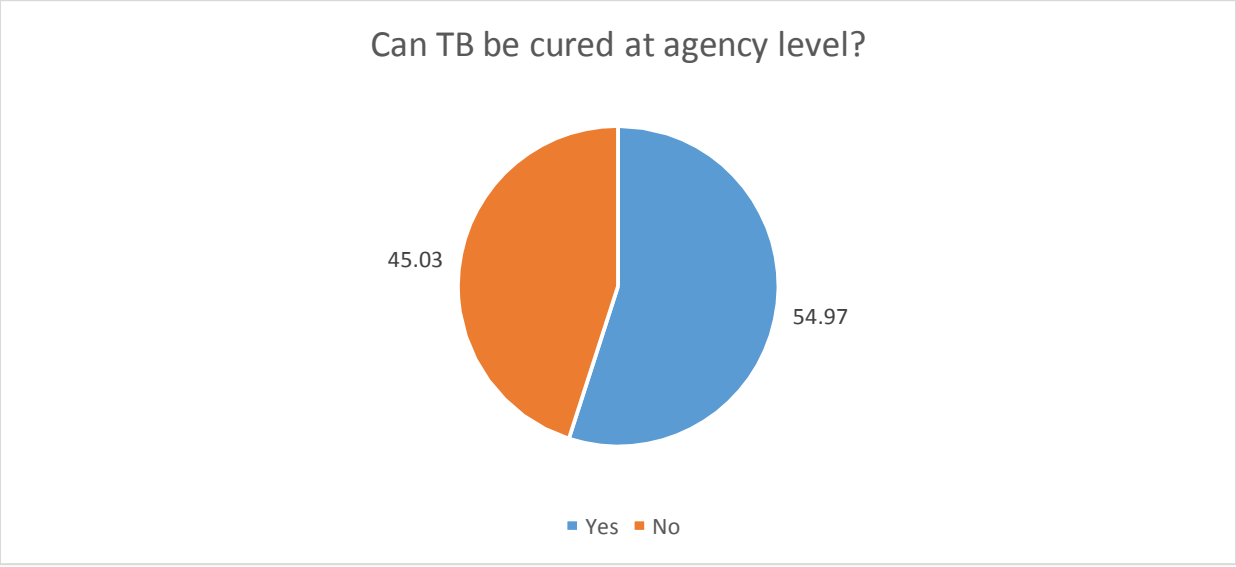


Figure 7 Can TB be cured at agency level?



TB Knowledge and Awareness

Figure 8 Does your close health facility provide medicine for treating TB?

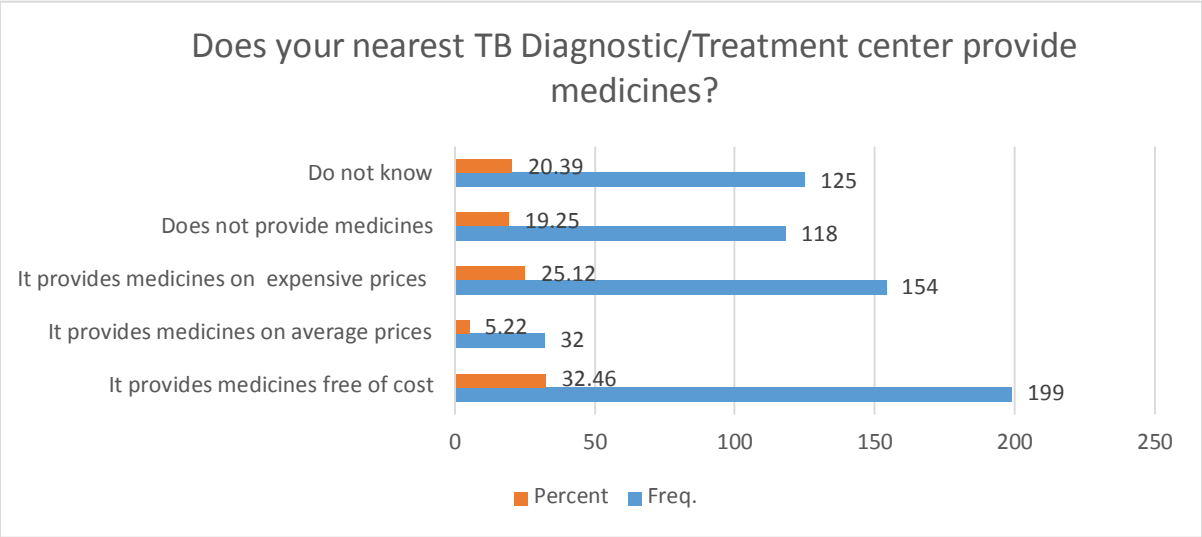


Figure 9 Which of the following statements is true according to your information?

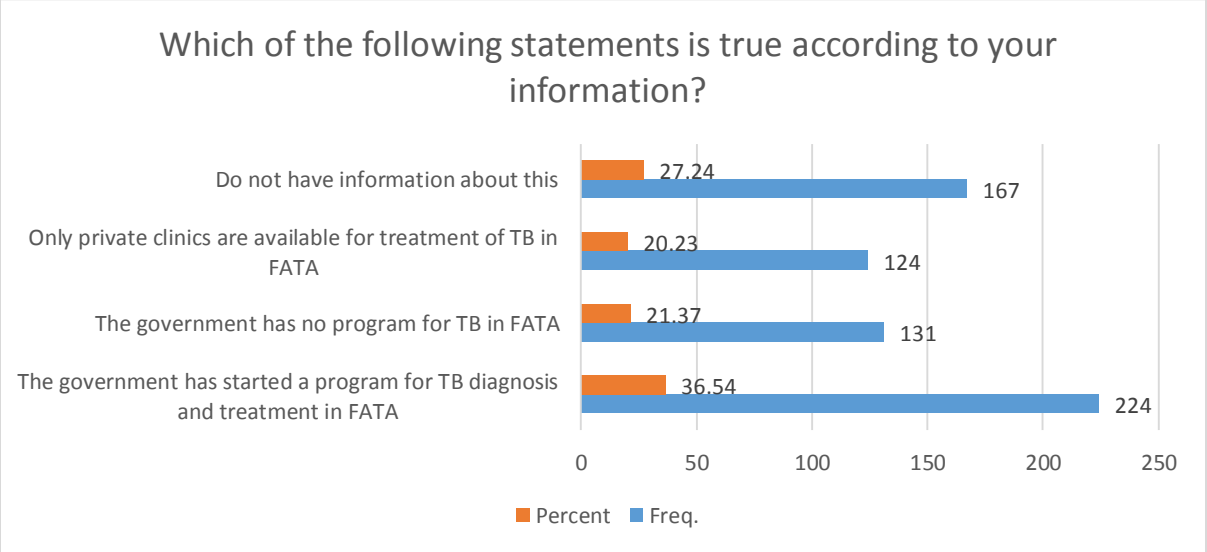
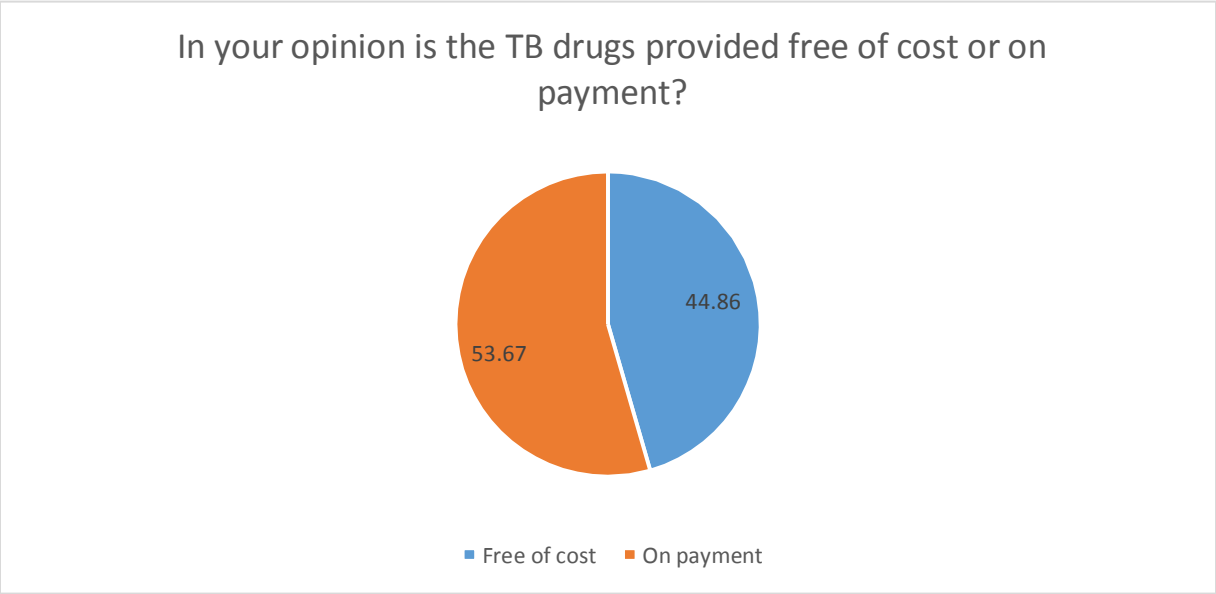
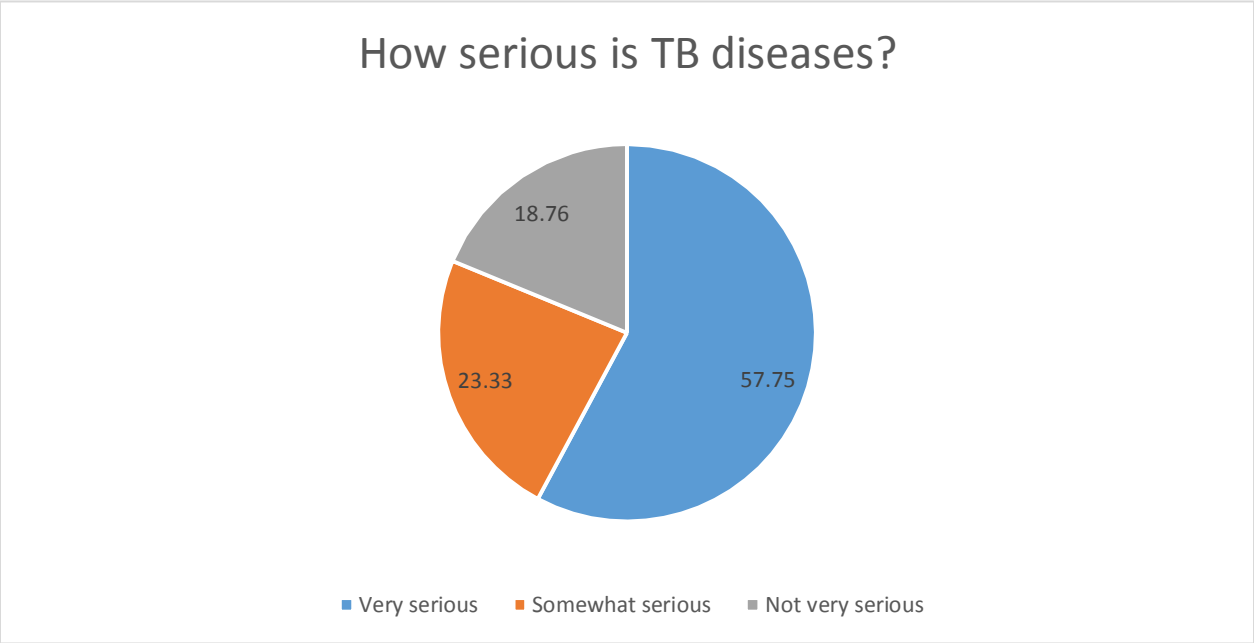


Figure 10 In your opinion is the TB drugs provided free of cost or on payment?



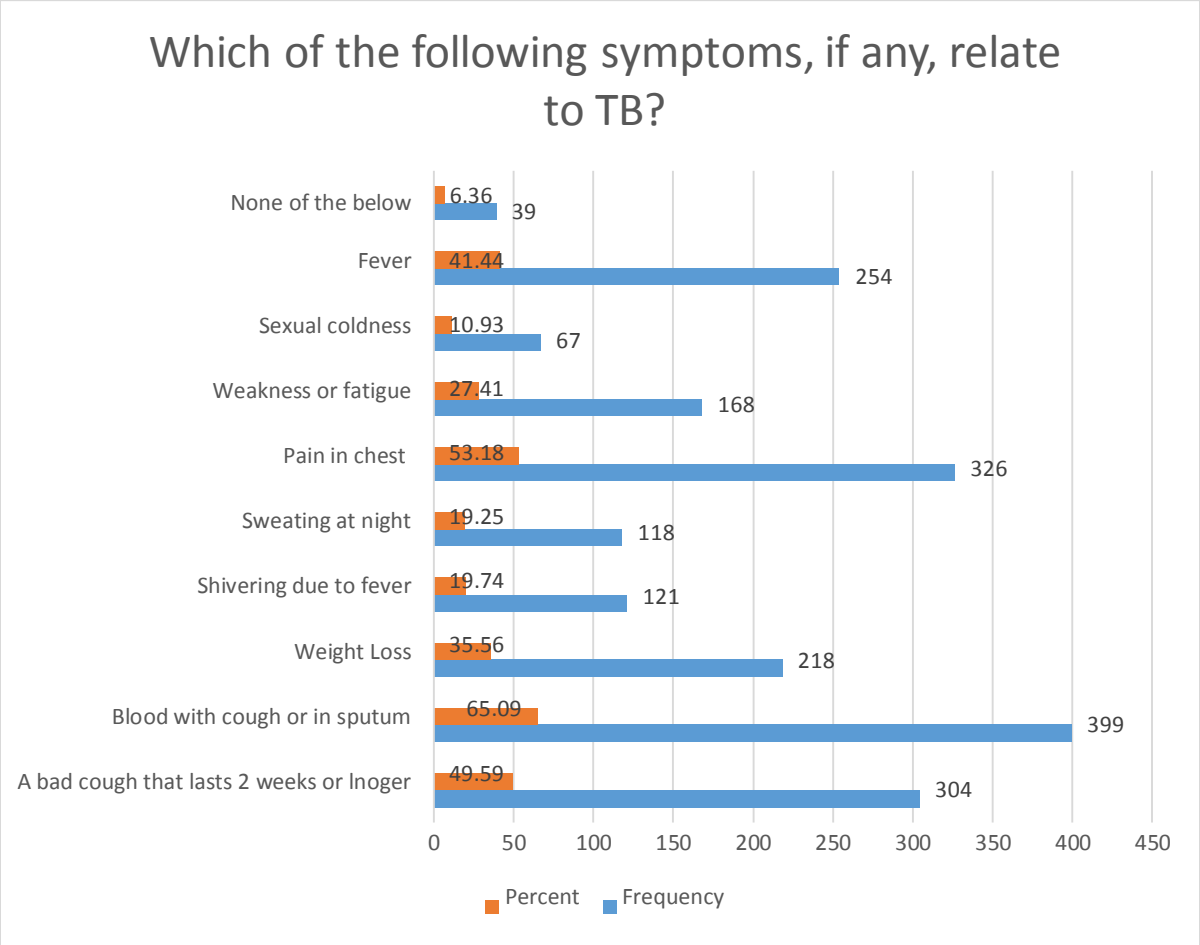
Knowledge of TB Seriousness

Figure 11 How serious is TB diseases?



Knowledge of TB Symptom Recognition

Figure 12 Which of the following symptoms, if any, relate to TB?



Knowledge of TB Transmission

Figure 13 How can a person be infected by TB?

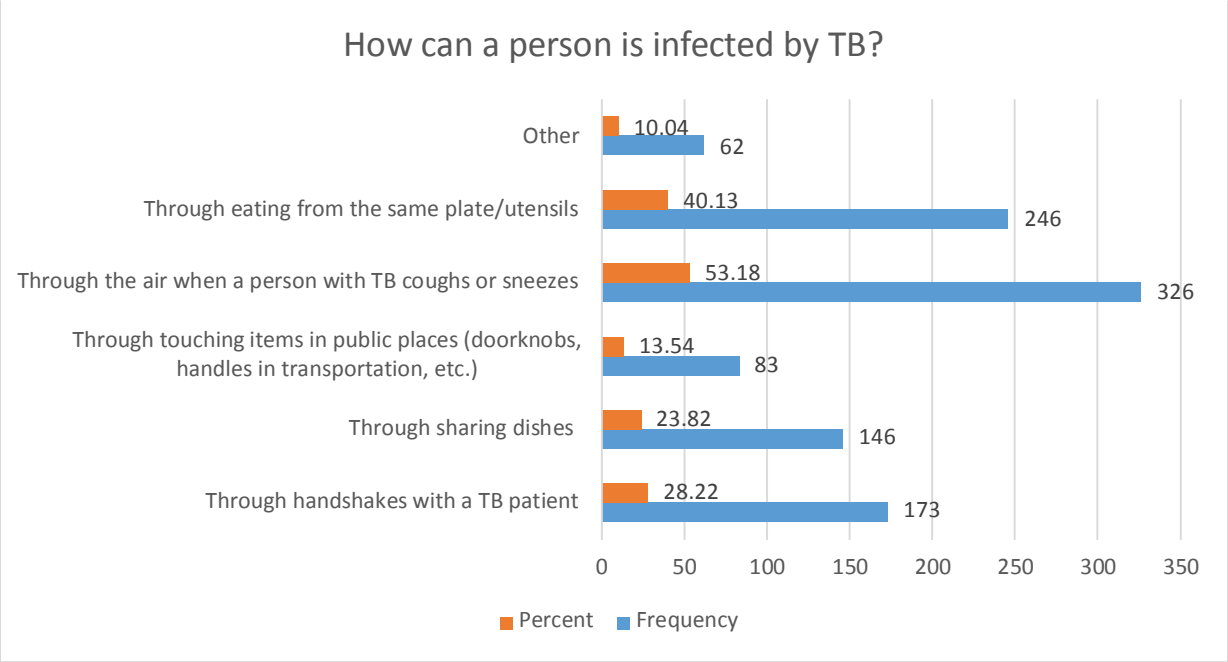


Figure 14 In your opinion, who can be infected with TB in village/community?

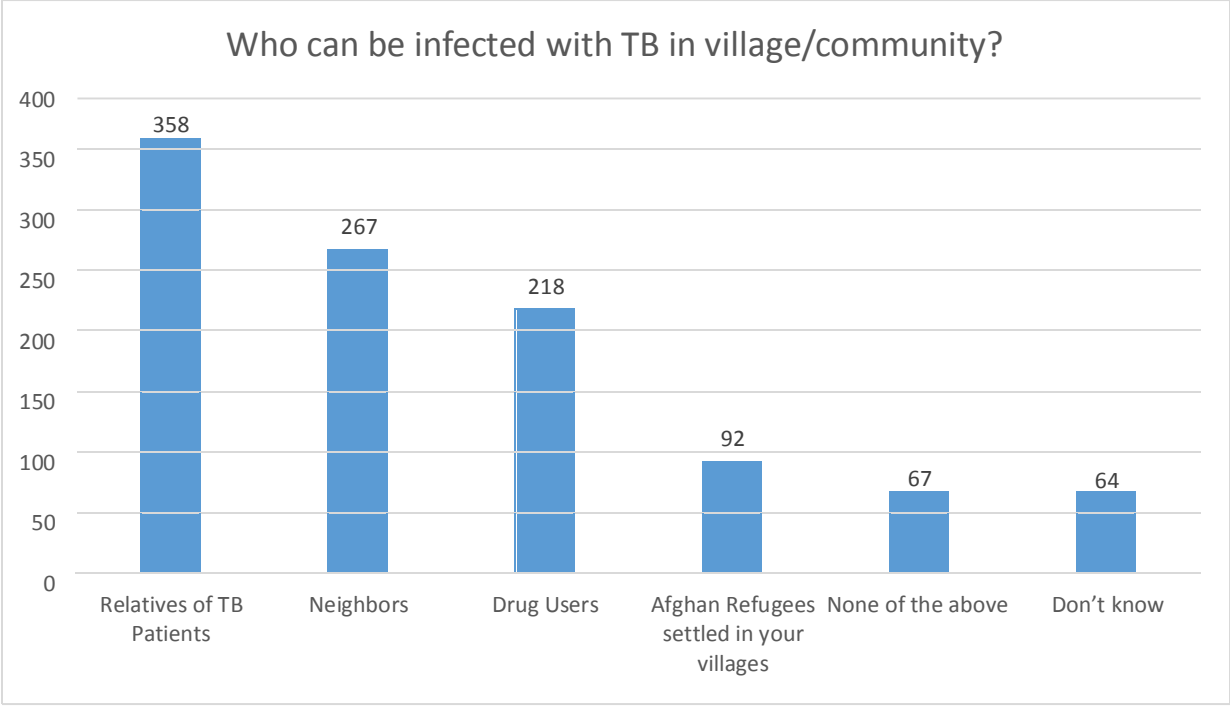
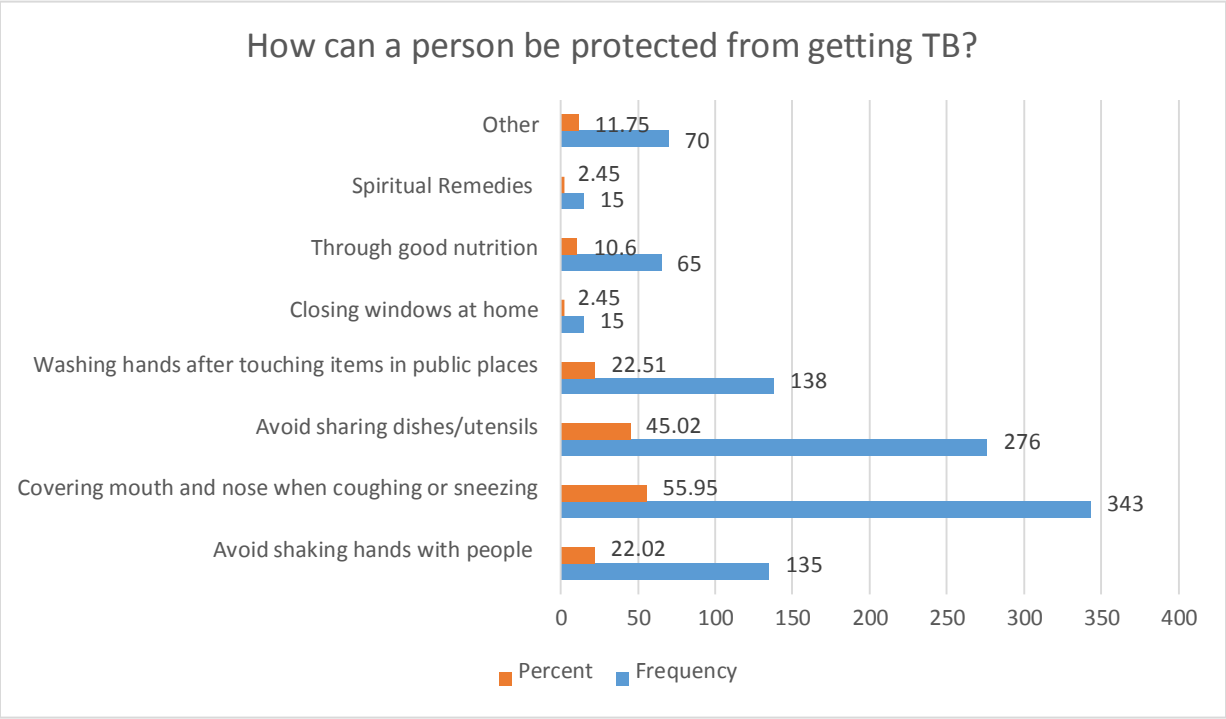


Figure 15 How can a person be protected from getting TB?



Knowledge of Availability of Cure

Figure 16 Can TB be cured at agency level?

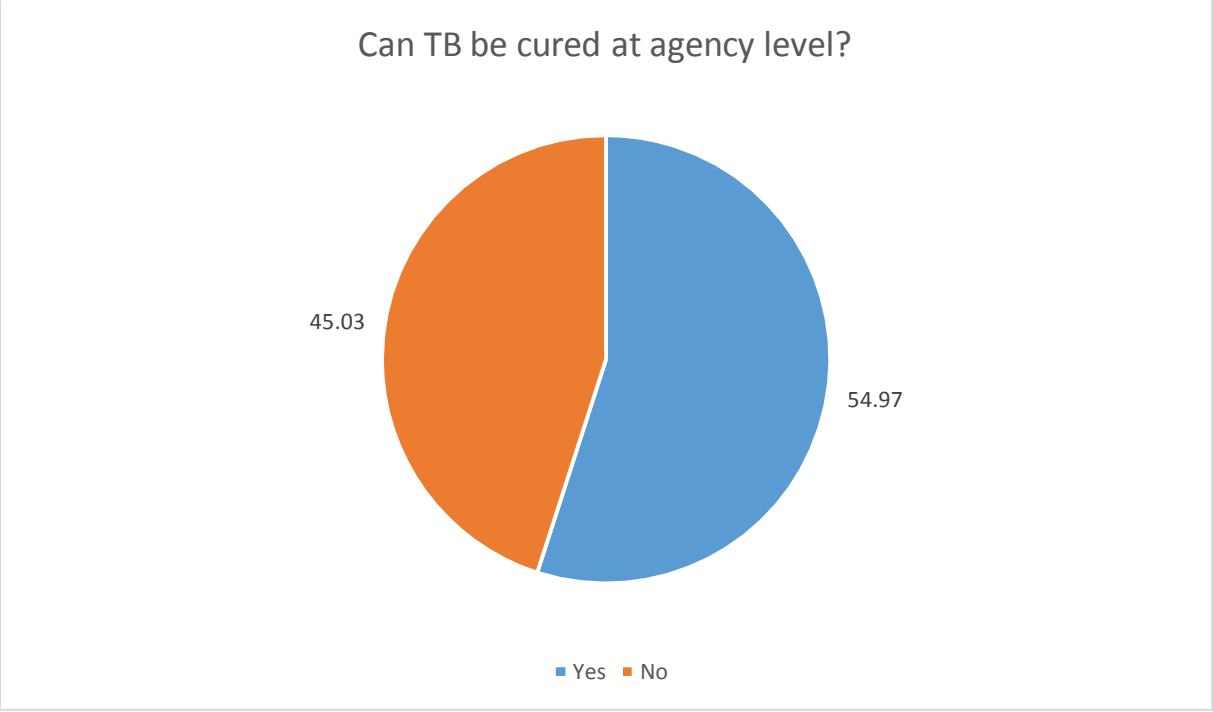
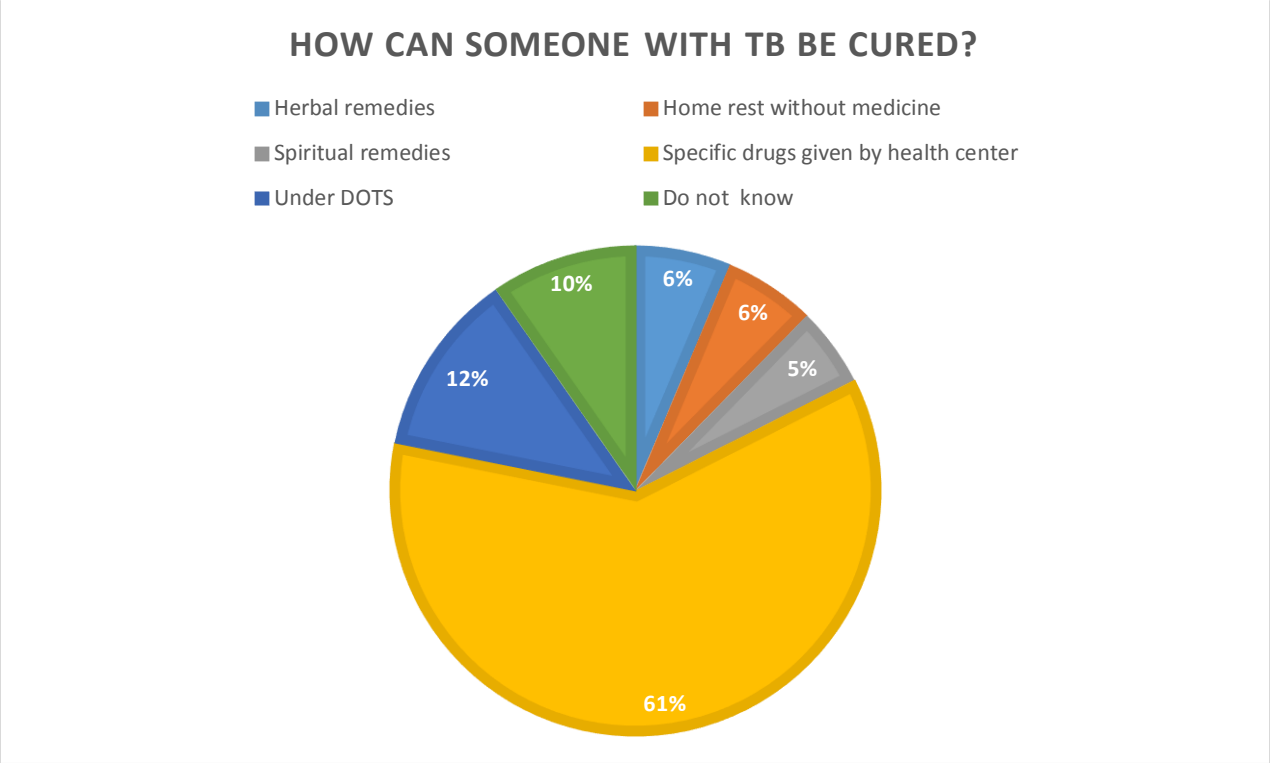


Figure 17 How can someone with TB be cured?



Knowledge of Necessity of Treatment

Figure 19 Attitude Upon Symptoms

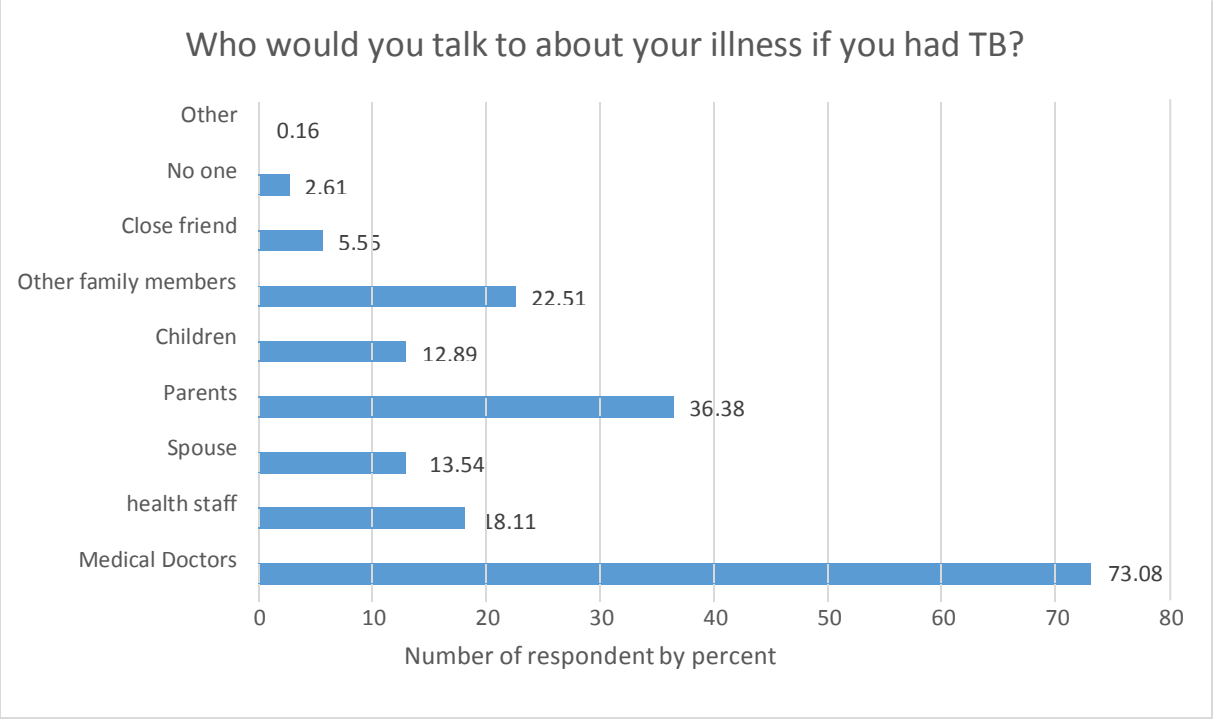


Figure 20 If you had symptoms of TB, at what point would you go to the health facility in Agency/FR?

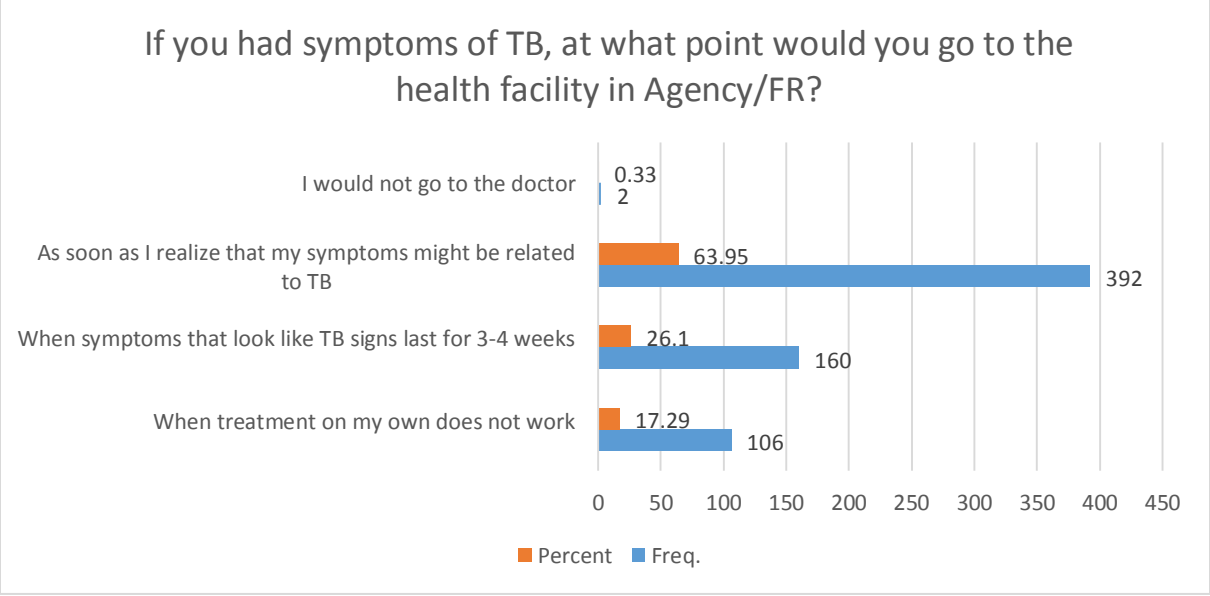
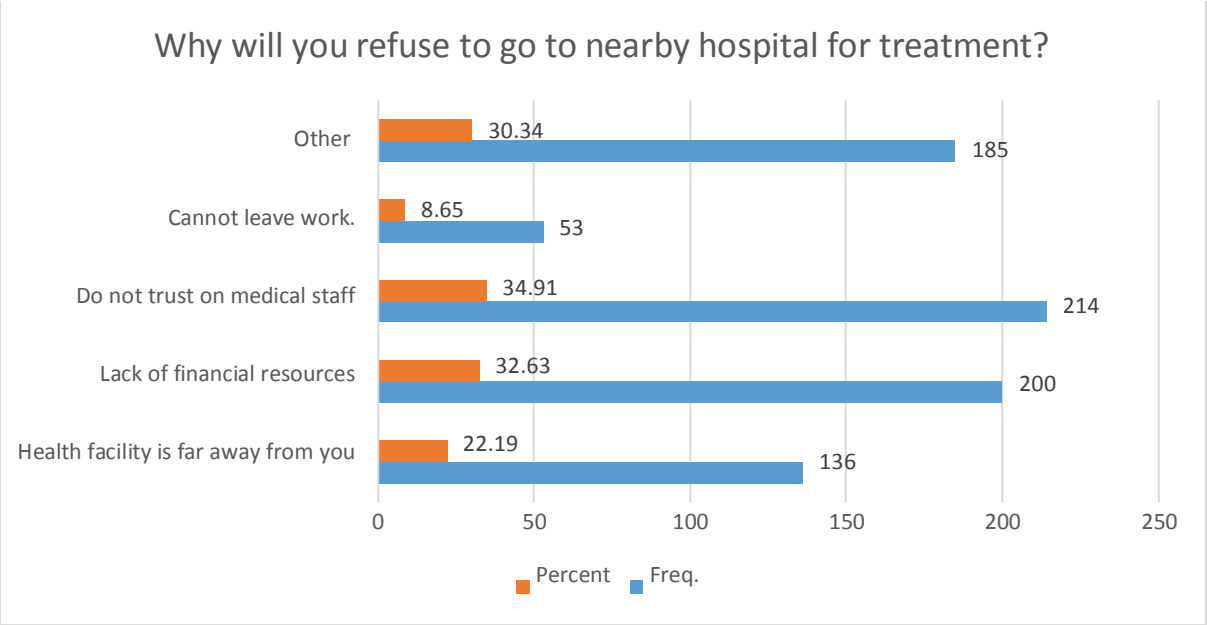
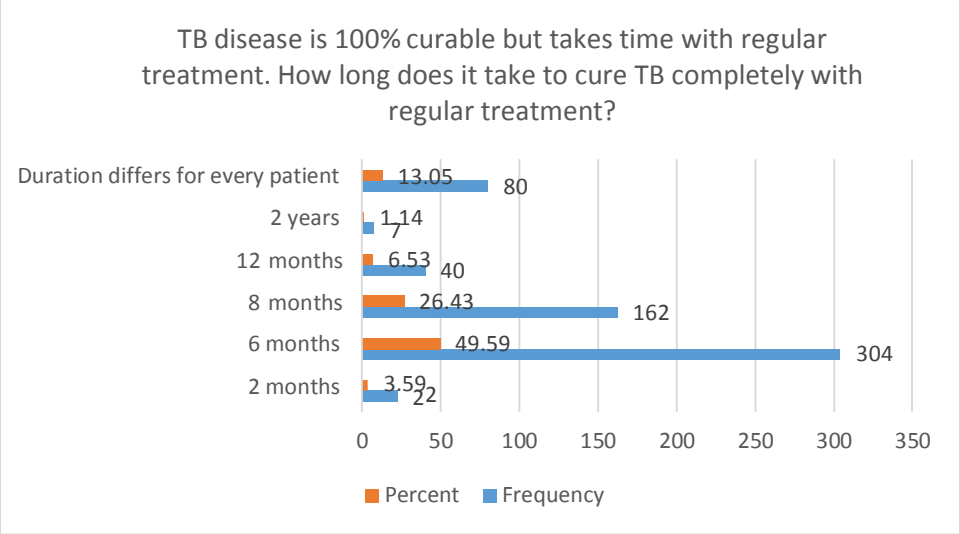


Figure 21 Why will you refuse to go to nearby hospital for treatment?



Knowledge of TB Treatment Regimen

Figure 18 disease is 100% curable but takes time with regular treatment. How long does it take to cure TB completely with regular treatment?



Indirect Reports on Continuation of TB Drug Regimen

Figure 22 Do you have TB patient in your family/locality?

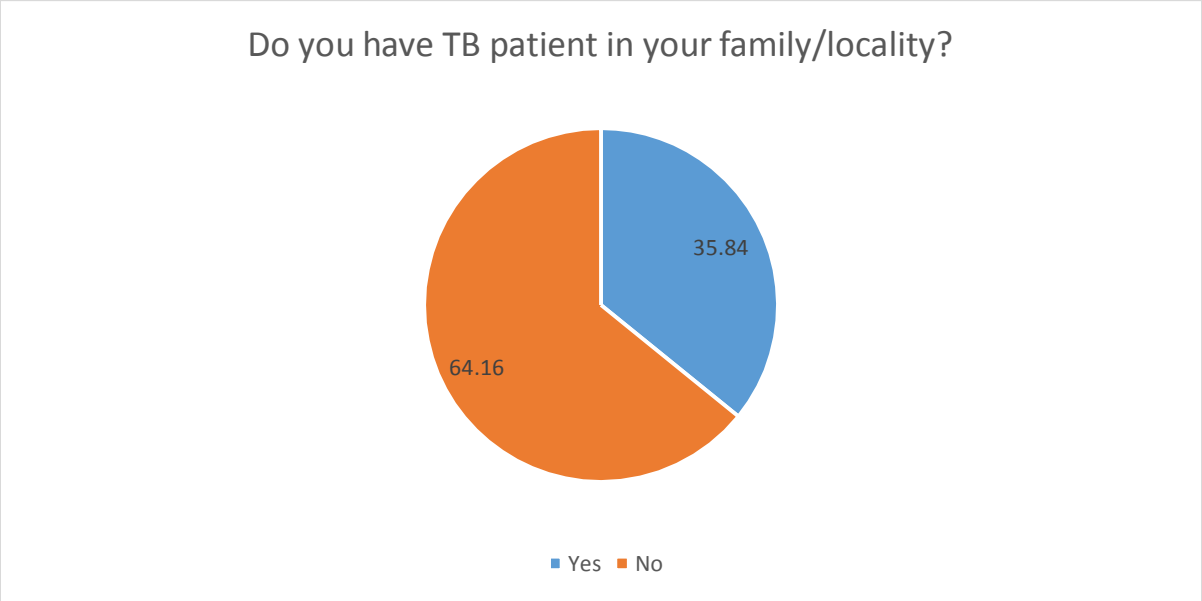
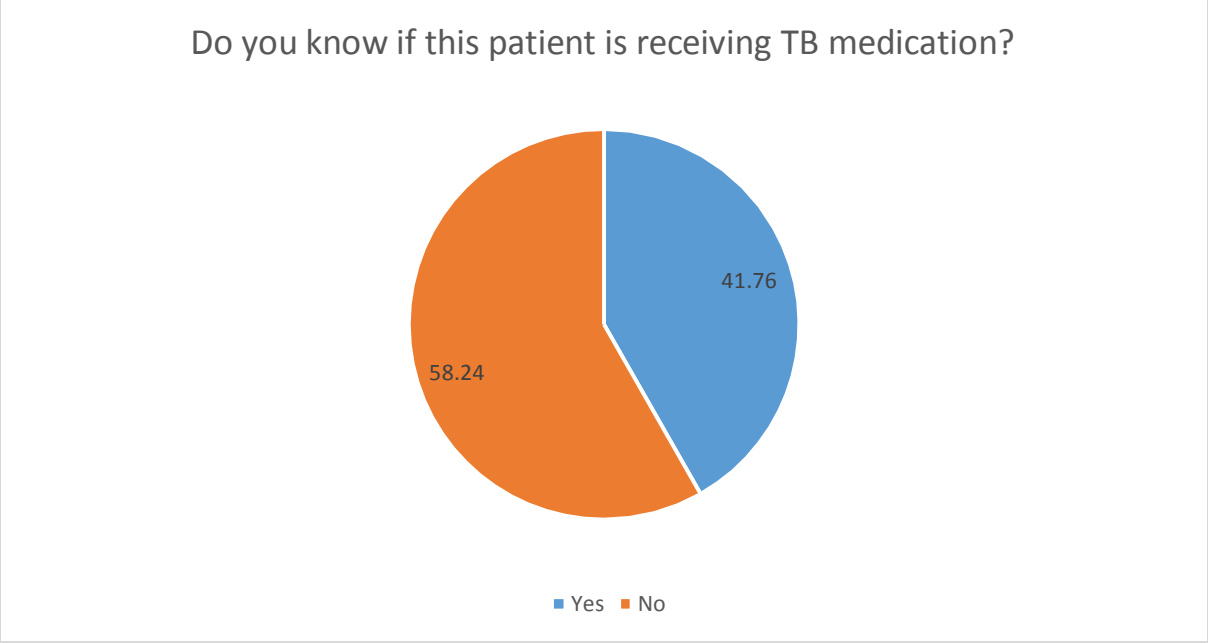


Figure 23 Do you know if this patient is receiving TB medication?



Community Attitudes toward Patients

Figure 24 In your opinion, can you be infected by TB in your village?

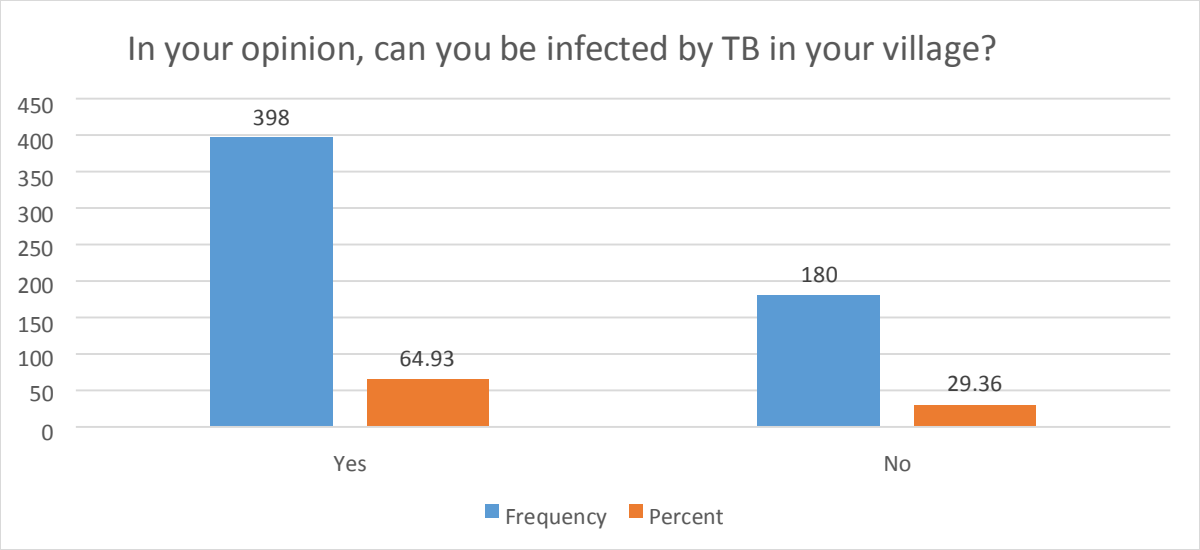


Figure 25 Do you feel fear that you will get infected by TB?

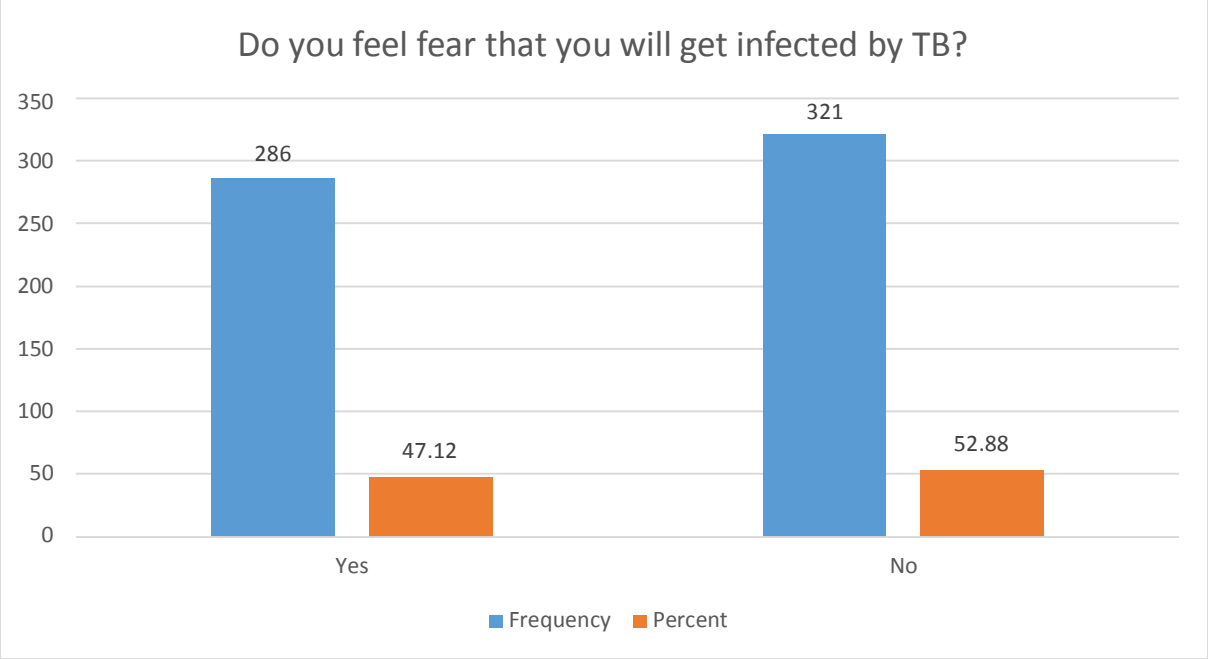


Figure 26 What would be your reaction if you were found out that you have TB?

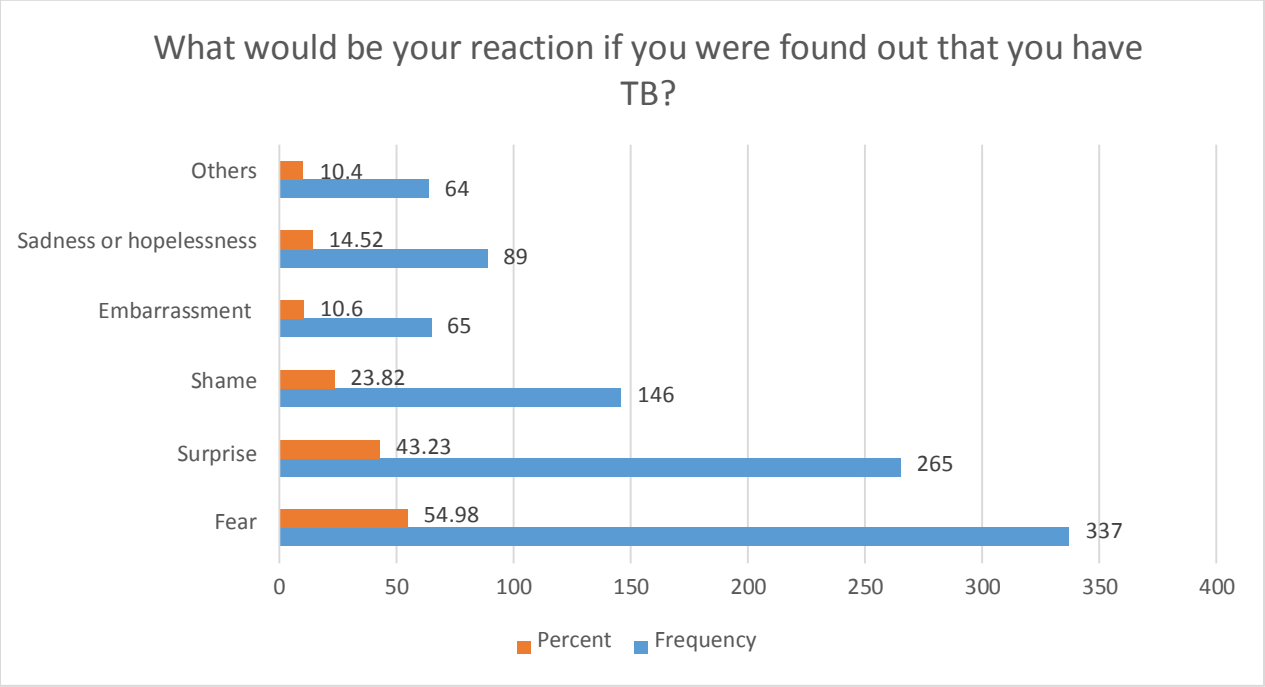
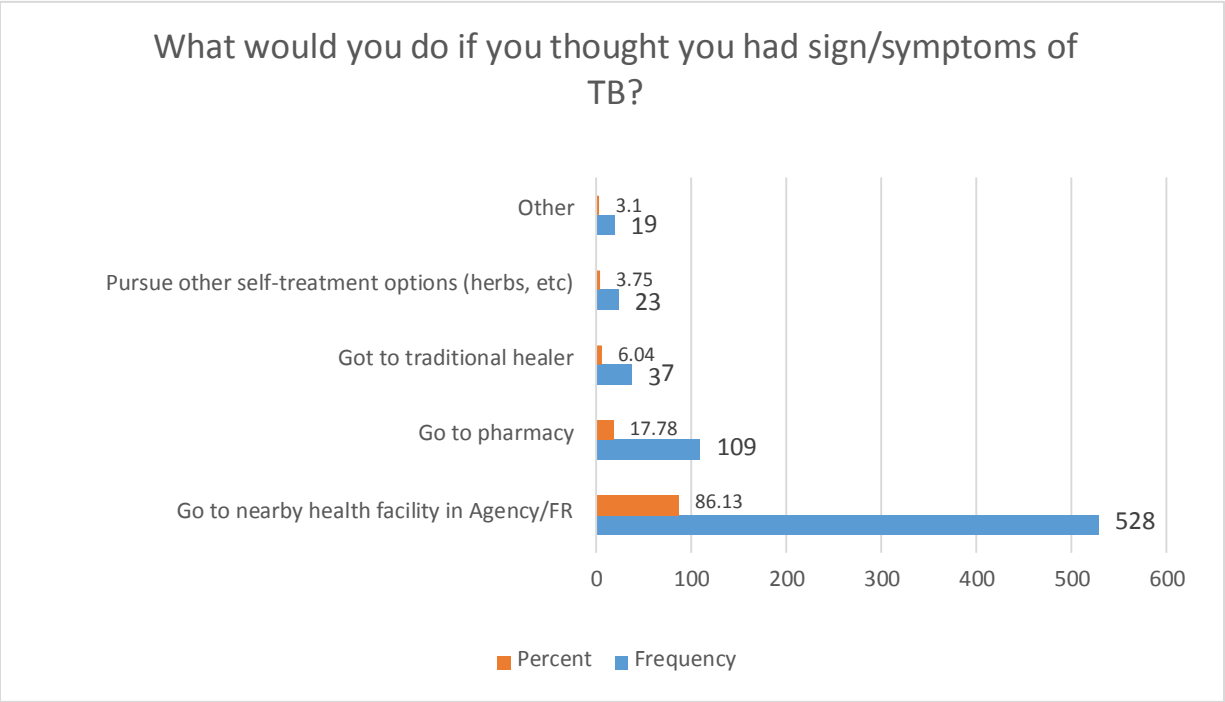


Figure 27 What would you do if you thought you had signs/symptoms of TB?



Summary Tables of Results

Table S. Summary statistics of key demographic characteristics by type of treatment.

	No pamphlets [Control]	Pamphlets with pictures	Pamphlets without pictures
Number of villages	38	39	42
Number of respondents	196	199	217
Distance to health facility or hospital (km)	11.08	9.66	11.79
Have a TB patient in family or locality (1=Yes)	0.296	0.354	0.417
How often seeks health care (1=Often)	0.708	0.732	0.824
Age (years)	33.750	32.704	34.888
Household size (persons)	17.327	17.638	16.662
Married	0.779	0.779	0.837
Years of education	6.398	7.283	6.637

Table S1. Estimated OLS and Multinomial Logit coefficients of the effect of treatment variables on number of correct symptoms recognized.

Number of correct symptoms recognized (no controls)		**OLS**	**Multinomial logit (number of symptoms =0 is the base)**								
Treatment type			1 symptom	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms
Pamphlet type	With pictures	0.237	0.338	-0.192	0.187	0.223	0.916*	1.012	0.734	-0	-0.0392
		(0.239)	(0.443)	(0.448)	(0.472)	(0.491)	(0.508)	(0.665)	(0.827)	(0.775)	(0.572)
	Without pictures	0.360	0.173	0.118	0.258	0.629	0.529	1.253*	1.322*	0.223	0.0561
		(0.233)	(0.448)	(0.439)	(0.470)	(0.476)	(0.524)	(0.650)	(0.772)	(0.742)	(0.564)
Any pamphlet		0.301	0.259	-0.0253	0.223	0.446	0.741*	1.139*	1.070	0.118	0.00957
		(0.206)	(0.380)	(0.376)	(0.403)	(0.415)	(0.449)	(0.591)	(0.717)	(0.648)	(0.483)
Pamphlet received by respondent		0.986***	-0.0611	-0.0148	0.449	0.804*	1.099**	1.068**	0.578	0.347	1.414***
		(0.198)	(0.409)	(0.407)	(0.421)	(0.423)	(0.439)	(0.511)	(0.608)	(0.662)	(0.502)
Pamphlets per household		0.327	0.0228	-0.482	-0.647	0.00984	0.0863	-0.855	-0.380	-0.356	0.848
		(0.578)	(1.073)	(1.110)	(1.171)	(1.118)	(1.165)	(1.155)	(1.331)	(1.497)	(1.294)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table S2. Estimated OLS coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.00691	0.0435	0.0124	-0.0449	-0.0418	-0.0624	0.0776*	-0.0335	0.0901*
		(0.0388)	(0.0441)	(0.0500)	(0.0380)	(0.0324)	(0.0505)	(0.0431)	(0.0350)	(0.0487)
	Without pictures	-0.0200	0.0411	0.0448	0.00907	-0.0498	0.0249	0.0341	-0.00192	0.0850*
		(0.0390)	(0.0431)	(0.0486)	(0.0347)	(0.0313)	(0.0489)	(0.0436)	(0.0326)	(0.0478)
Any pamphlet		-0.00715	0.0422	0.0293	-0.0167	-0.0460	-0.0169	0.0549	-0.0170	0.0874**
		(0.0338)	(0.0374)	(0.0429)	(0.0313)	(0.0285)	(0.0433)	(0.0382)	(0.0291)	(0.0422)
Pamphlet received by respondent		0.0312	0.0375	0.0936**	0.0459	0.0517*	0.130***	-0.0357	0.0631**	0.117***
		(0.0321)	(0.0372)	(0.0406)	(0.0296)	(0.0270)	(0.0408)	(0.0363)	(0.0270)	(0.0390)
Pamphlets per household		0.0451	0.0612	-0.0400	-0.00828	0.0263	0.0196	-0.0427	-0.110	0.139
		(0.0836)	(0.0927)	(0.0996)	(0.0675)	(0.0628)	(0.101)	(0.0870)	(0.0769)	(0.0947)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table S3. Estimated Probitcoefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.0263 (0.148)	0.139 (0.141)	0.0315 (0.127)	-0.178 (0.150)	-0.214 (0.166)	-0.158 (0.127)	0.250* (0.139)	-0.151 (0.158)	0.239* (0.129)
	Without pictures	-0.0730 (0.142)	0.132 (0.138)	0.115 (0.125)	0.0401 (0.153)	-0.263 (0.165)	0.0639 (0.126)	0.104 (0.133)	-0.00939 (0.159)	0.225* (0.126)
Any pamphlet		-0.0266 (0.126)	0.135 (0.122)	0.0751 (0.110)	-0.0697 (0.132)	-0.239* (0.141)	-0.0429 (0.110)	0.172 (0.117)	-0.0799 (0.139)	0.231** (0.111)
Pamphlet received by respondent		0.117 (0.122)	0.117 (0.115)	0.243** (0.106)	0.195 (0.129)	0.274** (0.138)	0.335*** (0.107)	-0.113 (0.114)	0.308** (0.138)	0.319*** (0.109)
Pamphlets per household		0.165 (0.318)	0.187 (0.276)	-0.102 (0.252)	-0.0348 (0.282)	0.138 (0.318)	0.0495 (0.255)	-0.134 (0.267)	-0.457 (0.292)	0.381 (0.272)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table S4. Estimated Marginal Effects of the effect of treatment variables at means on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.00691	0.0435	0.0124	-0.0449	-0.0418	-0.0624	0.0776*	-0.0335	0.0901*
		(0.0388)	(0.0440)	(0.0499)	(0.0379)	(0.0323)	(0.0504)	(0.0431)	(0.0350)	(0.0486)
	Without pictures	-0.0200	0.0411	0.0448	0.00907	-0.0498	0.0249	0.0341	-0.00192	0.0850*
		(0.0390)	(0.0430)	(0.0486)	(0.0346)	(0.0313)	(0.0488)	(0.0436)	(0.0326)	(0.0477)
Any pamphlet		-0.00718	0.0430	0.0292	-0.0169	-0.0436*	-0.0169	0.0538	-0.0173	0.0864**
		(0.0340)	(0.0387)	(0.0427)	(0.0321)	(0.0256)	(0.0433)	(0.0367)	(0.0300)	(0.0413)
Pamphlet received by respondent		0.0316	0.0372	0.0944**	0.0470	0.0495**	0.132***	-0.0353	0.0657**	0.119***
		(0.0329)	(0.0366)	(0.0414)	(0.0311)	(0.0248)	(0.0419)	(0.0356)	(0.0292)	(0.0406)
Pamphlets per household		0.165	0.187	-0.102	-0.0348	0.138	0.0495	-0.134	-0.457	0.381
		(0.318)	(0.276)	(0.252)	(0.282)	(0.318)	(0.255)	(0.267)	(0.292)	(0.272)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table S5. Estimated Logit coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.0467	0.237	0.0505	-0.319	-0.409	-0.252	0.426*	-0.280	0.386*
		(0.262)	(0.241)	(0.204)	(0.271)	(0.318)	(0.204)	(0.238)	(0.293)	(0.210)
	Without pictures	-0.128	0.225	0.185	0.0739	-0.505	0.103	0.176	-0.0177	0.364*
		(0.250)	(0.236)	(0.201)	(0.282)	(0.318)	(0.202)	(0.224)	(0.300)	(0.205)
Any pamphlet		-0.0470	0.231	0.120	-0.127	-0.458*	-0.0687	0.291	-0.149	0.375**
		(0.223)	(0.209)	(0.176)	(0.241)	(0.268)	(0.176)	(0.198)	(0.260)	(0.179)
Pamphlet received by respondent		0.208	0.198	0.391**	0.356	0.525**	0.539***	-0.192	0.580**	0.522***
		(0.218)	(0.195)	(0.172)	(0.238)	(0.264)	(0.172)	(0.193)	(0.265)	(0.179)
Pamphlets per household		0.304	0.317	-0.164	-0.0608	0.259	0.0797	-0.223	-0.817	0.633
		(0.587)	(0.466)	(0.405)	(0.491)	(0.590)	(0.411)	(0.444)	(0.513)	(0.458)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table S6. Estimated Odds ratio coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	1.048 (0.275)	1.268 (0.305)	1.052 (0.215)	0.727 (0.197)	0.664 (0.212)	0.777 (0.159)	1.531* (0.365)	0.756 (0.222)	1.472* (0.309)
	Without pictures	0.880 (0.220)	1.252 (0.296)	1.203 (0.242)	1.077 (0.303)	0.604 (0.192)	1.108 (0.223)	1.192 (0.268)	0.982 (0.295)	1.439* (0.294)
Any pamphlet		0.954 (0.213)	1.259 (0.263)	1.128 (0.198)	0.881 (0.212)	0.633* (0.170)	0.934 (0.165)	1.338 (0.265)	0.861 (0.224)	1.454** (0.260)
Pamphlet received by respondent		1.231 (0.268)	1.220 (0.238)	1.478** (0.254)	1.427 (0.339)	1.691** (0.446)	1.714*** (0.295)	0.825 (0.159)	1.787** (0.473)	1.685*** (0.302)
Pamphlets per household		1.355 (0.795)	1.374 (0.640)	0.849 (0.344)	0.941 (0.462)	1.296 (0.765)	1.083 (0.445)	0.800 (0.355)	0.442 (0.227)	1.882 (0.862)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C1. Estimated OLS and Multinomial Logit coefficients of the effect of treatment variables on number of correct symptoms recognized.

Number of correct symptoms recognized (with controls)		**OLS**	**Multinomial logit (number of symptoms =0 is the base)**								
Treatment type			1 symptom	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms
Pamphlet type	With pictures	0.0727	0.316	-0.164	0.145	0.122	0.816	0.886	0.673	0.0545	-0.214
		(0.219)	(0.469)	(0.467)	(0.485)	(0.510)	(0.525)	(0.688)	(0.867)	(0.813)	(0.610)
	Without pictures	0.0647	0.420	0.339	0.382	0.603	0.486	1.175*	1.191	0.244	-0.359
		(0.223)	(0.468)	(0.454)	(0.484)	(0.493)	(0.536)	(0.679)	(0.842)	(0.824)	(0.672)
Any pamphlet		0.0686	0.372	0.0970	0.265	0.379	0.675	1.034*	0.962	0.154	-0.284
		(0.192)	(0.404)	(0.395)	(0.417)	(0.432)	(0.464)	(0.617)	(0.769)	(0.707)	(0.544)
Pamphlet received by respondent		0.776***	-0.281	-0.138	0.381	0.701	0.946**	0.832	0.200	-0.0892	0.884
		(0.193)	(0.425)	(0.421)	(0.437)	(0.439)	(0.460)	(0.527)	(0.643)	(0.741)	(0.571)
Pamphlets per household		0.340	0.333	-0.480	-0.462	0.0187	0.210	-0.855	0.0378	0.500	1.361
		(0.513)	(1.143)	(1.140)	(1.215)	(1.198)	(1.261)	(1.306)	(1.592)	(1.757)	(1.582)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C2. Estimated OLS coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.00382 (0.0394)	0.0541 (0.0444)	-0.00349 (0.0489)	-0.0461 (0.0374)	-0.0323 (0.0319)	-0.0685 (0.0502)	0.0745* (0.0427)	-0.0395 (0.0355)	0.0749 (0.0487)
	Without pictures	-0.0344 (0.0400)	0.0633 (0.0442)	0.00832 (0.0487)	-0.0130 (0.0343)	-0.0299 (0.0315)	0.00300 (0.0493)	0.0223 (0.0443)	-0.0202 (0.0322)	0.0684 (0.0465)
Any pamphlet		-0.0157 (0.0345)	0.0588 (0.0385)	0.00256 (0.0421)	-0.0291 (0.0310)	-0.0311 (0.0281)	-0.0320 (0.0432)	0.0479 (0.0383)	-0.0297 (0.0291)	0.0716* (0.0417)
Pamphlet received by respondent		0.0315 (0.0323)	0.0505 (0.0380)	0.0766* (0.0407)	0.0347 (0.0293)	0.0558** (0.0275)	0.118*** (0.0413)	-0.0418 (0.0372)	0.0502* (0.0259)	0.114*** (0.0382)
Pamphlets per household		0.0403 (0.0825)	0.0806 (0.0913)	-0.0654 (0.0991)	-0.0201 (0.0665)	0.0520 (0.0611)	-0.0178 (0.0972)	-0.0646 (0.0872)	-0.116 (0.0734)	0.174* (0.0894)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C3. Estimated Probitcoefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.0194 (0.151)	0.160 (0.144)	-0.0119 (0.129)	-0.201 (0.154)	-0.174 (0.170)	-0.182 (0.130)	0.249* (0.141)	-0.201 (0.164)	0.200 (0.133)
	Without pictures	-0.117 (0.146)	0.196 (0.143)	0.0148 (0.128)	-0.0462 (0.157)	-0.157 (0.169)	0.00623 (0.129)	0.0636 (0.137)	-0.0713 (0.164)	0.192 (0.130)
Any pamphlet		-0.0511 (0.129)	0.179 (0.126)	0.00179 (0.111)	-0.127 (0.136)	-0.165 (0.144)	-0.0866 (0.112)	0.151 (0.119)	-0.139 (0.143)	0.196* (0.114)
Pamphlet received by respondent		0.125 (0.125)	0.151 (0.119)	0.208* (0.110)	0.171 (0.135)	0.320** (0.143)	0.318*** (0.110)	-0.133 (0.118)	0.279** (0.139)	0.332*** (0.113)
Pamphlets per household		0.157 (0.315)	0.238 (0.275)	-0.179 (0.256)	-0.0752 (0.283)	0.295 (0.310)	-0.0403 (0.254)	-0.202 (0.271)	-0.476* (0.284)	0.522* (0.285)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C4. Estimated Marginal Effects of the effect of treatment variables at means on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.00498	0.0490	-0.00462	-0.0464	-0.0309	-0.0718	0.0756*	-0.0403	0.0754
		(0.0386)	(0.0438)	(0.0502)	(0.0356)	(0.0301)	(0.0511)	(0.0426)	(0.0333)	(0.0499)
	Without pictures	-0.0319	0.0605	0.00574	-0.00977	-0.0280	0.00242	0.0206	-0.0133	0.0722
		(0.0398)	(0.0439)	(0.0499)	(0.0333)	(0.0303)	(0.0502)	(0.0444)	(0.0304)	(0.0489)
Any pamphlet		-0.0137	0.0561	0.000696	-0.0288	-0.0283	-0.0340	0.0467	-0.0278	0.0730*
		(0.0346)	(0.0396)	(0.0432)	(0.0308)	(0.0246)	(0.0443)	(0.0368)	(0.0286)	(0.0424)
Pamphlet received by respondent		0.0333	0.0473	0.0808*	0.0385	0.0539**	0.125***	-0.0412	0.0549**	0.123***
		(0.0332)	(0.0373)	(0.0427)	(0.0305)	(0.0241)	(0.0432)	(0.0365)	(0.0273)	(0.0420)
Pamphlets per household		0.157	0.238	-0.179	-0.0752	0.295	-0.0403	-0.202	-0.476*	0.522*
		(0.315)	(0.275)	(0.256)	(0.283)	(0.310)	(0.254)	(0.271)	(0.284)	(0.285)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C5. Estimated Logit coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	0.0232	0.301	-0.0128	-0.339	-0.325	-0.285	0.423*	-0.335	0.334
		(0.270)	(0.248)	(0.207)	(0.280)	(0.326)	(0.209)	(0.240)	(0.307)	(0.220)
	Without pictures	-0.224	0.346	0.0355	-0.0696	-0.313	0.0154	0.116	-0.162	0.304
		(0.260)	(0.246)	(0.208)	(0.290)	(0.331)	(0.209)	(0.233)	(0.307)	(0.213)
Any pamphlet		-0.105	0.324	0.0118	-0.212	-0.319	-0.133	0.261	-0.253	0.319*
		(0.231)	(0.219)	(0.179)	(0.249)	(0.275)	(0.181)	(0.201)	(0.268)	(0.186)
Pamphlet received by respondent		0.218	0.270	0.334*	0.291	0.591**	0.511***	-0.230	0.493*	0.538***
		(0.220)	(0.202)	(0.178)	(0.250)	(0.277)	(0.178)	(0.202)	(0.263)	(0.187)
Pamphlets per household		0.270	0.430	-0.276	-0.150	0.560	-0.0652	-0.350	-0.891*	0.852*
		(0.575)	(0.459)	(0.411)	(0.501)	(0.575)	(0.404)	(0.453)	(0.493)	(0.489)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table C6. Estimated Odds ratio coefficients of the effect of treatment variables on binomial responses.

		Dependent variables								
Treatment type		Seriousness of TB	Transmission of TB	Infection of TB	Cure for TB	Protection from TB	Government program for TB in FATA	How long to cure TB	What would do if had TB symptoms	If TB symptoms, when would go to health facility
Pamphlet type	With pictures	1.023 (0.276)	1.351 (0.336)	0.987 (0.204)	0.712 (0.200)	0.723 (0.236)	0.752 (0.157)	1.527* (0.367)	0.715 (0.220)	1.396 (0.307)
	Without pictures	0.800 (0.208)	1.414 (0.348)	1.036 (0.216)	0.933 (0.270)	0.731 (0.242)	1.015 (0.212)	1.123 (0.261)	0.850 (0.261)	1.356 (0.288)
Any pamphlet		0.901 (0.208)	1.383 (0.303)	1.012 (0.181)	0.809 (0.201)	0.727 (0.200)	0.875 (0.159)	1.298 (0.261)	0.777 (0.208)	1.376* (0.256)
Pamphlet received by respondent		1.244 (0.274)	1.310 (0.265)	1.397* (0.249)	1.338 (0.334)	1.806** (0.500)	1.667*** (0.296)	0.794 (0.160)	1.636* (0.430)	1.712*** (0.321)
Pamphlets per household		1.310 (0.753)	1.537 (0.705)	0.759 (0.311)	0.861 (0.431)	1.750 (1.007)	0.937 (0.379)	0.704 (0.319)	0.410* (0.202)	2.345* (1.147)

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Annexes

Annex I List of Villages with Tehsils and Agency in Each Group

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
				TOTAL	MALE	FEMALE		
1	South Waziristan Agency	Sararogha	Spinkai Raghzai	4,680	2,406	2,274	60	3
2	South Waziristan Agency	Sararogha	Ahmad Wan	798	413	385	78	4
3	South Waziristan Agency	Sararogha	Shamirai	1869	1042	827	52	3
4	South Waziristan Agency	Sararogha	Mandana	970	510	460	95	5
5	South Waziristan Agency	Sararogha	Partagai	337	166	171	40	2
6	South Waziristan Agency	Sararogha	Kotkai	1,222	715	508	75	4
7	South Waziristan Agency	Sararogha	Ganna				105	5
8	South Waziristan Agency	Sararogha	Janata	808	436	373	120	6
9	South Waziristan Agency	Sarwaikai	Manily khan sarai				55	3
10	South Waziristan Agency	Sarwaikai	Chaghmalai	6,031	2,993	3,038	80	4
11	South Waziristan Agency	sara rogha	Tangi Ghalishai	1,126	620	506	135	7
12	South Waziristan Agency	sararogha	Sheikh Zyarat	277	144	132	100	5

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
13	South Waziristan Agency	sararogha	murghi band	2,644	1,372	1,272	155	8
14	South Waziristan Agency	sararogha	warogh tanga	301	168	132	65	4
15	South Waziristan Agency	ladha	makin	111	75	36	58	3
16	FR Bannu	darobay	daroba				100	5
17	Mohmand Agency	Ambar	Agra				82	4
18	Mohmand Agency	Ambar	Mainei	324	144	180	43	2
19	Mohmand Agency	Ambar	Sro Shah	1,566	851	714	103	5
20	Mohmand Agency	Ambar	Bahmal Shah					
21	Mohmand Agency	?	Quang (Kaung)				36	2
22	Mohmand Agency	?	Ghundi (Ghandi in pamplet)	857	482	375	36	2
23	Mohmand Agency	?	Payi Khan	804	429	375	50	2
24	Mohmand Agency	?	Ajdara	1,125	563	563	35	2
25	Mohmand Agency	Pindiali	Hashim Killay/Hashim Kor	1,470	748	722		
26	Mohmand Agency	?	Sangar	849	413	437	24	1
27	Mohmand Agency	Bezai	Manzari Cheena	634	369	264	45	2
28	Mohmand Agency	Bezai	Tor Khel	1,284	684	600	40	2
29	Mohmand Agency	Bezai	Utem killi	1,658	879	778	35	2
30	Mohmand Agency	Bezai	Gaday Tangy	3,360	1,658	1,703	53	3
31	Mohmand Agency	Pindiali	ISMAIL SHER KILLI	2,428	1,217	1,211	40	2

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
32	Mohmand Agency	Prang Ghar	Zirak Bocha	2,559	1,298	1,262	242	12
33	Kurram Agency	Lower kurram	Durrani	3,625	1,831	1,794	200	10
34	Kurram Agency	Central Kurram	TINDO	6,287	3,233	3,054	260	10+9 extra
35	Kurram Agency	Kuram	Shamkhi	611	249	362	60	6
36	Kurram Agency		Jelamai	694	368	326	120	6
37	Kurram Agency	Central Kurram	TARI TANG	3,921	2,036	1,884	40	2+2extra
38	Kurram Agency		JABA	576	249	327	20	2
39	Kurram Agency	kuram	murgan	2,073	1,044	1,028	160	8
40	Kurram Agency	central kurram	DOGAR	2,028	1,069	959	100	5+2extra
41	Kurram Agency	lower kurram	Bilyameen	4,517	2,281	2,236	120	6
42	Kurram Agency	lower kurram	chaki kaly				100	5
43	Kurram Agency	CENTRAL KURRAM	MANATOO	2,627	1,303	1,324	140	8
44	Kurram Agency	CENTRAL KURRAM	ado	1,613	872	742	100	5
45	Kurram Agency	CENTAL KURRAM	CHAPPAR	4061	2100	1961	100	5
46	Kurram Agency	CENTRAL KURRAM	WACHA DARA	1,787	827	960	80	4
47	Kurram Agency		IDPs CAMP				140	7+1extra
48	Orakzai Agency	Lower Orakzai Agency	KALAYA SAIDAN	1,693	858	835	96	5
49	Orakzai Agency	Lower Orakzai Agency	CHOTA BEZNOOT	1,242	594	648	80	4
50	Orakzai Agency	Lower Orakzai Agency	SONGRANAI	3,385	1,671	1,714	120	6

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
51	Orakzai Agency	Lower Orakzai Agency	Terai	1574	801	773	88	4
52	Orakzai Agency	Lower Orakzai Agency	AHMED KHEL	840	442	398	68	3
53	Orakzai Agency	Lower Orakzai Agency	ESA KHEL	870	430	439	189	10
54	Orakzai Agency	Lower Orakzai Agency	Adam Khan Kaley	1,465	771	694		
55	Orakzai Agency	Lower Orakzai Agency	Mithoo	2,368	1,188	1,179	80	4
56	Orakzai Agency	Lower Orakzai Agency	Laira Mila	1638	822	816	31	2
57	Orakzai Agency	Lower Orakzai Agency	Feroz Khel Section				185	9
58	Orakzai Agency	Lower Orakzai Agency	Qeemat Khel (Shna Naka)				68	3
59	Orakzai Agency	Lower Orakzai Agency	Tagha Mila				14	1
60	Orakzai Agency	Lower Orakzai Agency	Toti Bagh				84	5
61	Orakzai Agency	Lower Orakzai Agency	Mirbak Kaley				108	5
62	Orakzai Agency	Lower Orakzai Agency	Jalaka Mila				68	3
63	Orakzai Agency	Lower Orakzai Agency	Kuraiz				109	5
64	Orakzai Agency	Lower Orakzai Agency	Jumari				87	4

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
65	Orakzai Agency	Lower Orakzai Agency	TARANGI	3,730	1,800	1,930	83	4
66	FR Kohat	FR Kohat	Jawaki				108	5
67	Orakzai Agency	Lower Orakzai Agency	Larshmar Kaley				26	2
68	FR Kohat	FR Kohat	Ara Khel				95	4
69	Orakzai Agency	Lower Orakzai Agency	Goli Kaley				55	3
70	Bajaur Agency	utman kheil	Gardai	2,215	1,107	1,109	95	5
71	Bajaur Agency	utman kheil	sikandro hayatai				180	8
72	Bajaur Agency	utmankheil	hayaty				195	10
73	Bajaur Agency	khar	mulakaly	2,298	1,216	1,082	90	5
74	Bajaur Agency	khar	jar	2,820	1,432	1,388	80	4
75	Bajaur Agency	salarzai	HAYA SERAI	644	293	351	60	3
76	Bajaur Agency	salarzai	BARA DAGAI	395	212	183	32	2
77	Bajaur Agency	khar	maminzo	3,377	1,721	1,656	270	14
78	Bajaur Agency	salarzai	loi kali	965	497	468	70	4
79	Bajaur Agency	mamundo	Lara Mukha	3,318	1,666	1,653	230	12
80	Bajaur Agency	mamundo	Zarai	3,789	1,975	1,813	150	8
81	Bajaur Agency	mamundo	Bar Kamar	1,199	601	599	70	4
82	Bajaur Agency	mamundo	bar kali				80	4
83	Bajaur Agency	mamundo	daag	2,697	1,350	1,347	138	7
84	Bajaur Agency	mamundo	tanry	2,500	1,248	1,252	170	8

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
85	Bajaur Agency	nawagai	Doda	2,903	1,469	1,433	190	10
86	Bajaur Agency	nawagai	Kohi	4,170	2,162	2,008	50	3
87	Bajaur Agency	nawagai	Sharif Khana	4,232	2,179	2,053	115	6
88	Bajaur Agency	nawagai	shakhany	563	297	266	52	3
89	Bajaur Agency	salarzai	Shahgai	110,196	56,847	53,349	missing	5
90	Bajaur Agency	khar	palang				112	6
91	Bajaur Agency	salarzai	aazamai	232	104	128	30	2
92	Bajaur Agency	khar	katar alizai	1,615	831	784	150	8
93	Bajaur Agency	khar	Qalacha	364	198	166	30	8
94	Bajaur Agency	salarzai	kharkano	181	89	93	35	2
95	Bajaur Agency	khar	loi baba	1,152	555	597	30	3
96	Bajaur Agency	salarzai	khatakoat	958	495	463	110	5
97	Bajaur Agency	utman kheil	Tangai	3,664	1,762	1,902	70	4
98	Bajaur Agency	utman kheil	Kochak Tangai	1,239	616	623	60	4
99	Bajaur Agency	utman kheil	rahim abad				20	2
100	Bajaur Agency	utman kheil	choray	2,091	1,061	1,029	190	10
101	Bajaur Agency	utman kheil	pajigraam	3792	1992	1800	250	13
102	Bajaur Agency	utman kheil	bar arang bagh	927	497	431	130	7
103	Khyber Agency	Landi kotal	Loe Shalman				50	1
104	Khyber Agency	landi kotal	landi kotal bazar				250	13
105	Khyber Agency	Landi kotal	Ayub killi	2,451	1,246	1,205	53	3

#	agency	tehsil	village	POPULATION			Total No. Of Households	Sample Population
106	Khyber Agency	Landi kotal	niki khel				55	3
107	Khyber Agency	Landi kotal	shahid khail	4,162	2,172	1,990	50	3
108	Khyber Agency	Jamrud	ghondi				75	5
109	Khyber Agency	Jamrud	Mian morcha/Mulagori	3666	1846	1819		3
110	Khyber Agency	Jamrud	Sheikh swat khan kali	1709	938	771	53	3
111	Khyber Agency	Jamrud	BARA DARA	1,182	632	550	85	5
112	Khyber Agency	Bara	Farsh killi	2,886	1,511	1,374	40	3
113	Khyber Agency	Bara	Mir Din Dhand	1,937	977	960	60	4
114	Khyber Agency	Bara	attari kali	1,620	833	787	80	5
115	Khyber Agency	Bara	Thanda Chena	1,666	844	822	70	4
116	Khyber Agency	Bara	Karna khail	3,486	1,775	1,711	100	5
117	Khyber Agency	Bara	Akhun killi	4,102	2,072	2,030	95	5
118	Khyber Agency	Bara	Syal khan khwarh				150	8
119	Khyber Agency	Bara	Baaz ghara	2,321	1,187	1,134	55	4
120	Khyber Agency	Bara	Speen Qabar/Sheen drang	2,621	1,362	1,259	275	14
121	Khyber Agency	Bara	Sheen drang					

Annex II Report on the TB information Pamphlet Distribution

Prepared by Hina Tallat and Waseem Riaz

Introduction:

Under the impact evaluation of TB Control Program FATA, an activity was carried out to distribute informatory leaflets in selected villages. These villages were already selected randomly for the KAP survey. The same villages were distributed in three groups namely; A, B and C for control group and experimental/treatment groups for general advocacy. Group was control group whereas Group B and C respondents of KAP I (baseline survey) received audio recorded messages on their cell numbers regarding information about TB.

It was decided in the latter part of evaluation that in addition to these audio messages, printed information will also be distributed. Thus the evaluation design of this part looks like:

- Group A=control group=no messages or information pamphlets
- Group B=treatment group BB= messages and information leaflets (text with pictures as List 1)
- Group C=treatment group CC= messages and information leaflets (text without pictures as List 2)

For the purpose of distributing the leaflets 12 internes were hired. These interns are residents of FATA agencies and are locally familiar with their respective areas. A one day orientation session was conducted on 25th March, 2015 at PCNA ISU FATA Office. The purpose of the session was to give them an over view about the overall activity and explain in detail how they would go about distribution. They were given instructions to go to target village; identify a place where there were

They were given 5 days (26th-30th March, 2015) for distribution each and return back to PCNA ISU FATA office for debriefing session on 31st March, 2015.

Methodology

One intern was made responsible for each list 1 and 2 to distribute leaflets in each village in specified agency. For execution of the activity and monitoring daily progress, a 7 days plan was developed by them based on their inherent knowledge, entailing which day they will cover which area, they also identified few villages that are deserted due to security or are too small to be known. They identified alternate villages-closest to the originally selected villages. The replaced and alternate villages were randomly run by officials and staff from FATA to ascertain authenticity of replacement. These were then made part of the final plan.

Progress

The plan was executed on major part according to plan. On daily basis or alternate days the interns reported via telephone to PCNA ISU FATA team regarding their progress and in cases a village could not be found/was vacated or/and was inaccessible and needed to be replaced. In areas where telephonic-coverage was not available, contact was made upon intern's arrival to

main cities. The following tables shows progress for each agency as with details of replacements if any, place where distribution was done, number of pamphlets distributed etc.

Pamphlets distribution details (26th-30th March, 2015)							
South Waziristan Agency							
S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	South Waziristan	Sararogha Tehsil	Sararogha (Sararogha Shamirai)		Hujra	25	1
2	South Waziristan	Sararogha Tehsil	Ganna (Ganrabat khel)		Hujra	25	1
3	South Waziristan	Sararogha Tehsil	Tangi Ghalishai		Hujra	25	1
4	South Waziristan		Splatoi	Kotkai/ Community gathering migrated, due to army operation (Rah-e-Nijat)	Hujra	25	1
5	South Waziristan	Sararogha Tehsil	Ahmad Wan		Hujra	25	1
6	South Waziristan	Ladha Tehsil	New Kachiyi (Kachkai)	Partegai/ Community gathering migrated, due to army operation (Rah-e-Nijat)	Hujra	25	1
1	South Waziristan	Ladha Tehsil	Bibizai Raghzai	Chaghmalai/ Community gathering migrated, due to army operation (Rah-e-Nijat)	Hujra	25	2
2	South Waziristan	Sararogha Tehsil	Spinkai Raghzai		Hujra	25	2
3	South Waziristan		Manily Khan Sarai		Hujra	25	2
4	South Waziristan	Sararogha Tehsil	Janatha (Janata)		Hujra	25	2
5	South Waziristan	Sararogha Tehsil	Mandana		Hujra	25	2

Orakzai Agency							
S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	Orakzai	Lower Tehsil			Hujra	25	1
2	Orakzai	Lower Tehsil	Char Khela	Replaeced GGDC Mirazai (Not found)	College	25	1
3	Orakzai	Cenetral Tehsil	Tagha Mela (Takta Alora Mela)	Replaeced GGDC Kalaya (Not found)	Community gathering	25	1
4	Orakzai	Cenetral Tehsil	Laira Mela, Khandu (Alora Mela)		Hujra	25	1
5	Orakzai		Mirbak Killi		Community gathering	25	1
6	Orakzai	Lower Tehsil	Zeena Khel		Community gathering	25	1
7	Orakzai	Lower Tehsil	Jalka Milah (JALKA BEZNOOT MELA)		Bazar	25	1
1	Orakzai	UPPER TEHSIL	Totrangi (TATAI/DAOTARA)	Repacled with Koraiz (Not found)	Bazar	25	2
2	Orakzai	UPPER TEHSIL	Mitto Killi (TOOR SMITH)		Community gathering	25	2
3	Orakzai	LOWER TEHSIL	Larashmar Killi		Bazar	25	2
4	Orakzai	Cenetral Tehsil	Goli Kaley Sultan Zae (Dara Sultan Nawasi)		Hujra	25	2
5	Orakzai		Toti Bagh		Hujra	25	2
6	Orakzai	Lower Tehsil	Jamiri		Bazar	25	2
7	Orakzai	Lower Tehsil	Kalaya (Suleman) (KALAYA SAIDAN)		Community Parking	25	2
8	Orakzai		Feroz Khel Section		Hujra	25	2
Bajur Agency							
S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	Bajur Agency	UtmanKhel Tehsil	KochakTangi		Masjid & Hujra	25	1

2	Bajur Agency	KharBajaur Tehsil	Loye Baba (Toi Baba)		School	25	1
3	Bajur Agency	UtmanKhel Tehsil	Barand (BaghBarang)		School/ Masjid	25	1
4	Bajur Agency	SALARAZAI TEHSIL	Kharkano		Hujra	25	1
5	Bajur Agency	SALARAZAI TEHSIL	A'azama (Azamai)		Hujra	25	1
6	Bajur Agency	Mumand Tehsil	Tanry (Tanai)		Masjid & Hujra	25	1
7	Bajur Agency	Mumand Tehsil	Bar Kamar		Hujra	25	1
8	Bajur Agency		Moukha		Hujra/shops	25	1
9	Bajur Agency	Nawagai Tehsil	Doda		Market	25	1
10	Bajur Agency	KharBajaur Tehsil	Qalacha		Hujra/Masjid	25	1
11	Bajur Agency	SALARAZAI TEHSIL	Shahgai		Hujra	25	1
12	Bajur Agency		Palang		Shopes/ Individuals	25	1
1	Bajur Agency	SALARAZAI TEHSIL	Jar (JARGAI)		Market/ Hujra	25	2
2	Bajur Agency	Mumand Tehsil	ZaraShah (Zarai)		Shops/Hujra	25	2
3	Bajur Agency	Nawagai Tehsil	Sharif Abad (Sharif Khana)		Market/ Hujra	25	2
4	Bajur Agency	UtmanKhel Tehsil	Shahkhanay (Shahkar Shah)	Pandu (Not Found)	Masjid	25	2
5	Bajur Agency	UtmanKhel Tehsil	Tangi		Ground/ Hujra	25	2
6	Bajur Agency	Nawagai Tehsil	SHAGO (SHAGO DHAND)		Hujra	25	2
7	Bajur Agency	Mumand Tehsil	Daag		Hujra	25	2
8	Bajur Agency	KharBajaur Tehsil	MulaKaly		Hujra	25	2
9	Bajur Agency	Mumand Tehsil	Bar Kalay		Hujra/ Individual	25	2
10	Bajur Agency	SALARAZAI TEHSIL	Hayati (HAYA SERAI)		Masjid/ Hujra	25	2
11	Bajur Agency		SikandarHayati		Market	25	2
12	Bajur Agency	KharBajaur Tehsil	Aleeemzai (Katar Ali Zai)		School/ Community gathering	25	2
Kurram Agency							

S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	Kurram Agency	Central Kurrum/ FR Kurram	Murghan (MARG JAI)		Community gathering (people playign cricket)	25	1
2	Kurram Agency	Central Kurrum/ FR Kurram	Jangal	Ado	shops	25	1
3	Kurram Agency	Central Kurrum/ FR Kurram	Jaba		Community gathering elders	25	1
4	Kurram Agency	LOWER KURRAM TEHSIL	Durani (DURANI KILLA)		Hujra	35	1
5	Kurram Agency		Jida Mai		play ground	20	1
1	Kurram Agency	UPPER KURRAM TEHSIL	WachaDara		community elders' gathering	18	2
2	Kurram Agency	Central Kurrum/ FR Kurram	Tornazon (TOOR NAZOOR)		Hujra	30	2
3	Kurram Agency	LOWER KURRAM TEHSIL	Balyamin (BAL LISH KHEL)		public Place in the village/aroudn shops	11	2
4	Kurram Agency	Central Kurrum/ FR Kurram	Doghar		House of a local influential (went on reference)	30	2
5	Kurram Agency	Central Kurrum/ FR Kurram	Koat	IDP Camp (Sadda)	school; people gatehred	30	2
6	Kurram Agency		Manato				2

Khyber Agency

S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	Khyber Agency	Bara Tehsil	SherKilli	Spin Qabar & Shin Drang (Not Found)	Masjid & Hujra	25	1
2	Khyber	Bara Tehsil	TandaCheena		Hujra	25	1

	Agency						
3	Khyber Agency	Bara Tehsil	AkhunKilli		Hujra	25	1
4	Khyber Agency	MULAGORI TEHSIL	Bara Darra		Hujra	25	1
5	Khyber Agency	LANDI KOTL TEHSIL	MinadarKilli	Naiki Khel (Security Reason)	Hujra	25	1
6	Khyber Agency	Bara Tehsil	KarnaKhel		Hujra	25	1
1	Khyber Agency	Bara Tehsil	YarshahKilli	seyail Khan Khwar (not found)	Shops	25	2
2	Khyber Agency	Bara Tehsil	FarashKilli		Hujra	25	2
3	Khyber Agency	LANDI KOTL TEHSIL	Haji Noor Alam Ganger Khel	Landi Kotal Bazar (not found)	Bazar	25	2
4	Khyber Agency	MULAGORI TEHSIL	Sheikh Swat Khan Killi		Community gathering	25	2
5	Khyber Agency	Bara Tehsil	Atri (Attari)		Community gathering / Hujra	25	2
6	Khyber Agency	LANDI KOTL TEHSIL	HessarKilli	Shahid Khel (Security Reason)	Shops/ Hujra	25	2
Mohmmand Agency							
S. No	Agency	Tehsil name	Villages List Provided By PCNA-ISU-FATA	Alternate village (in case if village is changed with reason)	Place in the village	No of pamphlets distributed	List No.
1	Mohmand Agency		Balosa	Aghra (Not found)	Masjid	25	1
2	Mohmand Agency	Umber UthmanKhel Tehsil	Maini (Maniai)		Hujra	25	1
3	Mohmand Agency	Umber UthmanKhel Tehsil	Sro Shah		Community gathering	25	1
4	Mohmand Agency	Umber UthmanKhel Tehsil	Sara Shah	Repetetion		25	1
5	Mohmand Agency		Lila Kalay	Bakhmal Shah (Not found)	Bazar	25	1
1	Mohmand Agency	UPER MOHAMMAND TEHSIL	UtemKilli		Hujra & Masjid	25	2

2	Mohmand Agency	PRANG GHAR TEHSIL	Zarkbocha		Hujra & Masjid	25	2
3	Mohmand Agency	Umber UthmanKhel Tehsil	Khowga	Qwang	Bazar	25	2
4	Mohmand Agency	Umber UthmanKhel Tehsil	Ghandi		Hujra	25	2
5	Mohmand Agency	Umber UthmanKhel Tehsil	Payi khan		Houses (on distance from each other)	25	2
6	Mohmand Agency	PINDIALI TEHSIL	HashamKalay		Hujra & Masjid	25	2

Annex III Detailed Tables of Results

Table 1. Estimated OLS coefficients.

Dependent variable: Number of symptoms related to TB that are marked (1-10).

VARIABLES	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Pamphlets with picture	0.0545			
	(0.211)			
Pamphlets without picture	0.0716			
	(0.216)			
Received any type of pamphlet		0.0632		
		(0.184)		
Respondent received a pamphlet			0.727***	
			(0.187)	
Number of pamphlets per household				0.322
				(0.488)
Distance to health facility or hospital (km)	-0.0175***	-0.0174***	-0.0198***	-0.0168***
	(0.00518)	(0.00515)	(0.00491)	(0.00527)
Have a TB patient in family or locality	1.329***	1.329***	1.222***	1.343***
	(0.195)	(0.195)	(0.195)	(0.195)
How often seeks health care (1=Often)	0.484**	0.486**	0.523**	0.470**
	(0.212)	(0.211)	(0.210)	(0.212)
Age (years)	0.0334***	0.0334***	0.0316***	0.0338***
	(0.00880)	(0.00878)	(0.00871)	(0.00880)
Household size (persons)	-0.0210***	-0.0210***	-0.0196***	-0.0207***
	(0.00749)	(0.00749)	(0.00722)	(0.00740)
Married	0.0449	0.0453	0.0435	0.0434
	(0.231)	(0.231)	(0.226)	(0.233)
Years of education	0.0888***	0.0888***	0.0817***	0.0918***
	(0.0187)	(0.0187)	(0.0181)	(0.0189)
Constant	1.199***	1.197***	1.085***	1.125***
	(0.389)	(0.387)	(0.374)	(0.387)
Observations	603	603	604	592
R-squared	0.171	0.171	0.193	0.173

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 2. Estimated Multinomial Logit coefficients (number of symptoms =1 is the base) for treatment 1.

Dependent variable: Number of symptoms related to TB that are marked (1-10).

VARIABLES	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms	10 symptoms
Pamphlets with picture	-0.406	-0.0937	-0.117	0.576	0.642	0.424	-0.196	-0.464	-2.855**
	(0.297)	(0.332)	(0.370)	(0.383)	(0.588)	(0.791)	(0.732)	(0.498)	(1.282)
Pamphlets without picture	0.0389	0.0869	0.308	0.191	0.878	0.899	-0.0467	-0.635	15.63***
	(0.291)	(0.336)	(0.349)	(0.407)	(0.579)	(0.759)	(0.736)	(0.566)	(2.156)
Distance to health facility or hospital (km)	0.0163*	-0.000590	0.00152	0.00883	0.00354	-0.0704*	-0.116	-0.386***	-0.284**
	(0.00857)	(0.0116)	(0.0104)	(0.0101)	(0.0149)	(0.0362)	(0.0846)	(0.0871)	(0.134)
Have a TB patient in family or locality	-0.541*	0.306	0.170	0.764**	1.326***	2.093***	2.116***	2.105***	23.66***
	(0.286)	(0.298)	(0.307)	(0.307)	(0.407)	(0.648)	(0.768)	(0.462)	(4.171)
How often seeks health care (1=Often)	-0.0598	0.563*	1.055***	0.959**	0.575	0.470	0.106	0.403	15.08***
	(0.267)	(0.330)	(0.380)	(0.409)	(0.513)	(0.629)	(0.620)	(0.538)	(1.399)
Age (years)	0.00515	-0.000654	0.0241*	0.00777	0.0247	0.0285	0.0358**	0.0762***	0.386***
	(0.0131)	(0.0134)	(0.0131)	(0.0160)	(0.0226)	(0.0205)	(0.0182)	(0.0198)	(0.108)
Household size (persons)	0.0176	0.0144	-0.0229	-0.0371**	-0.0164	-0.0189	-0.0471	-0.0134	0.235***
	(0.0109)	(0.0126)	(0.0195)	(0.0163)	(0.0225)	(0.0350)	(0.0490)	(0.0251)	(0.0724)
Married	-0.371	-0.302	-0.267	-0.391	-0.660	0.992	15.29***	0.494	8.164***
	(0.357)	(0.388)	(0.413)	(0.422)	(0.610)	(1.094)	(0.462)	(0.928)	(1.794)
Years of education	-0.0168	-0.0186	0.0387	0.0362	0.0539	0.115*	0.0779	0.267***	1.065***
	(0.0262)	(0.0310)	(0.0314)	(0.0370)	(0.0450)	(0.0661)	(0.0612)	(0.0504)	(0.319)
Constant	-0.231	-1.037	-2.217***	-1.982**	-3.708***	-6.078***	-19.05***	-6.251***	-94.21***
	(0.582)	(0.675)	(0.771)	(0.825)	(0.975)	(1.679)	(1.228)	(1.434)	(13.85)
Observations	603	603	603	603	603	603	603	603	603

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 3. Estimated Multinomial Logit coefficients (number of symptoms =1 is the base) for treatment 2.

Dependent variable: Number of symptoms related to TB that are marked (1-10).

VARIABLES	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms	10 symptoms
Received any type of pamphlet	-0.178	-0.00662	0.108	0.403	0.760	0.688	-0.121	-0.554	13.06***
	(0.252)	(0.289)	(0.313)	(0.350)	(0.536)	(0.705)	(0.635)	(0.452)	(1.074)
Distance to health facility or hospital (km)	0.0175**	-0.000311	0.00194	0.00916	0.00366	-0.0691*	-0.115	-0.376***	-0.171***
	(0.00856)	(0.0115)	(0.0103)	(0.00998)	(0.0149)	(0.0358)	(0.0835)	(0.0848)	(0.0501)
Have a TB patient in family or locality	-0.526*	0.314	0.191	0.745**	1.339***	2.134***	2.126***	2.101***	15.78***
	(0.286)	(0.297)	(0.304)	(0.310)	(0.408)	(0.643)	(0.759)	(0.464)	(1.329)
How often seeks health care (1=Often)	-0.0286	0.578*	1.095***	0.923**	0.597	0.528	0.115	0.381	14.29***
	(0.266)	(0.330)	(0.378)	(0.397)	(0.514)	(0.610)	(0.637)	(0.526)	(1.146)
Age (years)	0.00561	-0.000442	0.0248*	0.00669	0.0250	0.0283	0.0359**	0.0761***	0.130***
	(0.0130)	(0.0134)	(0.0132)	(0.0160)	(0.0226)	(0.0206)	(0.0182)	(0.0199)	(0.0214)
Household size (persons)	0.0165	0.0138	-0.0240	-0.0363**	-0.0171	-0.0209	-0.0475	-0.0132	0.0668***
	(0.0107)	(0.0125)	(0.0194)	(0.0164)	(0.0225)	(0.0349)	(0.0476)	(0.0251)	(0.0243)
Married	-0.371	-0.299	-0.261	-0.414	-0.652	1.002	14.39***	0.510	12.20***
	(0.357)	(0.388)	(0.415)	(0.425)	(0.609)	(1.088)	(0.483)	(0.935)	(1.141)
Years of education	-0.0183	-0.0189	0.0382	0.0359	0.0541	0.115*	0.0776	0.267***	0.415***
	(0.0262)	(0.0309)	(0.0313)	(0.0368)	(0.0448)	(0.0669)	(0.0614)	(0.0503)	(0.0684)
Constant	-0.256	-1.048	-2.266***	-1.906**	-3.738***	-6.128***	-18.17***	-6.275***	-67.31***
	(0.579)	(0.676)	(0.776)	(0.812)	(0.968)	(1.685)	(1.232)	(1.434)	(4.049)
Observations	603	603	603	603	603	603	603	603	603

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 4. Estimated Multinomial Logit coefficients (number of symptoms =1 is the base) for treatment 3.

Dependent variable: Number of symptoms related to TB that are marked (1-10).

VARIABLES	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms	10 symptoms
Respondent received a pamphlet	0.0525	0.573*	0.892***	1.138***	1.024**	0.388	0.103	1.056**	-17.42***
	(0.264)	(0.293)	(0.300)	(0.327)	(0.418)	(0.554)	(0.665)	(0.475)	(1.491)
Distance to health facility or hospital (km)	0.0172*	-0.00220	-0.000868	0.00546	0.00145	-0.0706**	-0.119	-0.346***	-0.170***
	(0.00882)	(0.0113)	(0.0101)	(0.0102)	(0.0143)	(0.0353)	(0.0866)	(0.0780)	(0.0649)
Have a TB patient in family or locality	-0.501*	0.252	0.111	0.676**	1.298***	2.130***	2.144***	1.950***	19.45***
	(0.281)	(0.301)	(0.306)	(0.320)	(0.415)	(0.661)	(0.810)	(0.460)	(1.859)
How often seeks health care (1=Often)	-0.0173	0.628*	1.179***	1.061***	0.781	0.635	0.111	0.446	16.32***
	(0.266)	(0.331)	(0.391)	(0.399)	(0.509)	(0.637)	(0.623)	(0.535)	(1.332)
Age (years)	0.00406	-0.00134	0.0234*	0.00491	0.0239	0.0284	0.0377**	0.0727***	0.232***
	(0.0127)	(0.0136)	(0.0132)	(0.0164)	(0.0230)	(0.0205)	(0.0174)	(0.0198)	(0.0613)
Household size (persons)	0.0167	0.0146	-0.0223	-0.0348**	-0.0162	-0.0197	-0.0481	-0.0168	0.183***
	(0.0106)	(0.0123)	(0.0198)	(0.0168)	(0.0229)	(0.0345)	(0.0470)	(0.0276)	(0.0495)
Married	-0.359	-0.300	-0.262	-0.407	-0.670	1.009	16.50***	0.478	11.57***
	(0.353)	(0.389)	(0.419)	(0.433)	(0.611)	(1.080)	(0.303)	(0.925)	(1.474)
Years of education	-0.0229	-0.0231	0.0312	0.0297	0.0500	0.120*	0.0797	0.245***	0.810***
	(0.0264)	(0.0308)	(0.0308)	(0.0370)	(0.0434)	(0.0664)	(0.0637)	(0.0497)	(0.186)
Constant	-0.316	-1.195*	-2.460***	-2.044**	-3.603***	-5.873***	-20.45***	-6.722***	-69.34***
	(0.565)	(0.658)	(0.776)	(0.795)	(0.961)	(1.751)	(1.304)	(1.376)	(6.480)
Observations	604	604	604	604	604	604	604	604	604

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 5. Estimated Multinomial Logit coefficients (number of symptoms =1 is the base) for treatment 4.

Dependent variable: Number of symptoms related to TB that are marked (1-10).

VARIABLES	2 symptoms	3 symptoms	4 symptoms	5 symptoms	6 symptoms	7 symptoms	8 symptoms	9 symptoms	10 symptoms
Number of pamphlets per household	-0.763	-0.735	-0.255	-0.0675	-1.136	-0.252	0.209	1.058	-5.085**
	(0.604)	(0.729)	(0.694)	(0.809)	(0.881)	(1.249)	(1.455)	(1.253)	(2.151)
Distance to health facility or hospital (km)	0.0189**	0.00178	0.00340	0.0136	0.00999	-0.0672*	-0.117	-0.363***	-0.157***
	(0.00878)	(0.0118)	(0.0104)	(0.0103)	(0.0150)	(0.0357)	(0.0857)	(0.0845)	(0.0524)
Have a TB patient in family or locality	-0.527*	0.359	0.247	0.740**	1.373***	2.173***	2.149***	2.056***	17.43***
	(0.289)	(0.300)	(0.306)	(0.328)	(0.416)	(0.647)	(0.749)	(0.429)	(1.420)
How often seeks health care (1=Often)	-0.0175	0.593*	1.221***	0.801**	0.671	0.631	0.112	0.325	15.17***
	(0.266)	(0.332)	(0.392)	(0.398)	(0.511)	(0.621)	(0.627)	(0.524)	(1.121)
Age (years)	0.00536	-0.000378	0.0249*	0.00910	0.0303	0.0281	0.0349*	0.0737***	0.177***
	(0.0128)	(0.0134)	(0.0132)	(0.0172)	(0.0232)	(0.0210)	(0.0179)	(0.0192)	(0.0292)
Household size (persons)	0.0164	0.0137	-0.0215	-0.0446**	-0.0151	-0.0182	-0.0480	-0.0233	0.140***
	(0.0105)	(0.0126)	(0.0189)	(0.0179)	(0.0221)	(0.0345)	(0.0488)	(0.0279)	(0.0282)
Married	-0.365	-0.306	-0.264	-0.396	-0.760	1.007	14.89***	0.545	12.94***
	(0.355)	(0.387)	(0.416)	(0.450)	(0.613)	(1.087)	(0.478)	(0.903)	(1.475)
Years of education	-0.0196	-0.0155	0.0426	0.0463	0.0748*	0.121*	0.0719	0.250***	0.601***
	(0.0262)	(0.0312)	(0.0313)	(0.0395)	(0.0442)	(0.0712)	(0.0626)	(0.0509)	(0.0916)
Constant	-0.238	-0.992	-2.367***	-1.707**	-3.412***	-5.753***	-18.69***	-6.443***	-62.18***
	(0.570)	(0.676)	(0.777)	(0.835)	(0.970)	(1.806)	(1.300)	(1.333)	(4.269)
Observations	592	592	592	592	592	592	592	592	592
R-squared									

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 6. Estimated OLS coefficients.

Dependent variable: Dependent variable: In your opinion, how serious is TB diseases? (1 if chosen "i. Very serious" or "ii. Somewhat serious", 0 if "iii. Not very serious").

VARIABLES	1	2	3	4
Pamphlets with picture	0.00382			
	(0.0394)			
Pamphlets without picture	-0.0344			
	(0.0400)			
Received any type of pamphlet		-0.0157		
		(0.0345)		
Respondent received a pamphlet			0.0315	
			(0.0323)	
Number of pamphlets per household				0.0403
				(0.0825)
Distance to health facility or hospital (km)	-0.00107	-0.00114	-0.00128	-0.00111
	(0.00125)	(0.00127)	(0.00127)	(0.00129)
Have a TB patient in family or locality	0.00885	0.00734	0.00217	0.00331
	(0.0342)	(0.0341)	(0.0342)	(0.0350)
How often seeks health care (1=Often)	0.0681*	0.0648	0.0656*	0.0599
	(0.0398)	(0.0396)	(0.0394)	(0.0398)
Age (years)	0.00198	0.00193	0.00180	0.00204
	(0.00141)	(0.00141)	(0.00140)	(0.00142)
Household size (persons)	-0.00258	-0.00252	-0.00244	-0.00256
	(0.00158)	(0.00158)	(0.00160)	(0.00161)
Married	-0.0472	-0.0480	-0.0481	-0.0508
	(0.0464)	(0.0464)	(0.0464)	(0.0470)
Years of education	-0.00263	-0.00257	-0.00315	-0.00237
	(0.00352)	(0.00352)	(0.00345)	(0.00357)
Constant	0.812***	0.816***	0.803***	0.797***
	(0.0775)	(0.0774)	(0.0782)	(0.0804)
Observations	603	603	604	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 7. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: Dependent variable: In your opinion, how serious is TB diseases? (1 if chosen "i. Very serious" or "ii. Somewhat serious", 0 if "iii. Not very serious").

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	0.0194	0.00498						
	(0.151)	(0.0386)						
Pamphlets without picture	-0.117	-0.0319						
	(0.146)	(0.0398)						
Received any type of pamphlet			-0.0511	-0.0137				
			(0.129)	(0.0346)				
Respondent received a pamphlet					0.125	0.0333		
					(0.125)	(0.0332)		
Number of pamphlets per household							0.157	0.157
							(0.315)	(0.315)
Distance to health facility or hospital (km)	-0.00330	-0.000883	-0.00363	-0.000970	-0.00433	-0.00116	-0.00356	-0.00356
	(0.00434)	(0.00116)	(0.00436)	(0.00116)	(0.00442)	(0.00118)	(0.00444)	(0.00444)
Have a TB patient in family or locality	0.0289	0.00773	0.0233	0.00623	0.00331	0.000882	0.00704	0.00704
	(0.128)	(0.0341)	(0.127)	(0.0340)	(0.128)	(0.0342)	(0.128)	(0.128)
How often seeks health care (1=Often)	0.240*	0.0641*	0.229*	0.0612*	0.233*	0.0621*	0.210	0.210
	(0.137)	(0.0364)	(0.136)	(0.0362)	(0.136)	(0.0360)	(0.136)	(0.136)
Age (years)	0.00751	0.00201	0.00734	0.00196	0.00680	0.00181	0.00778	0.00778
	(0.00574)	(0.00153)	(0.00573)	(0.00153)	(0.00572)	(0.00152)	(0.00572)	(0.00572)
Household size (persons)	-0.00876*	-0.00234*	-0.00861*	-0.00230*	-0.00837	-0.00223	-0.00871*	-0.00871*
	(0.00513)	(0.00137)	(0.00512)	(0.00137)	(0.00517)	(0.00138)	(0.00514)	(0.00514)
Married	-0.174	-0.0466	-0.175	-0.0469	-0.175	-0.0467	-0.186	-0.186
	(0.173)	(0.0462)	(0.173)	(0.0463)	(0.174)	(0.0462)	(0.173)	(0.173)
Years of education	-0.0104	-0.00278	-0.0101	-0.00270	-0.0125	-0.00335	-0.00902	-0.00902
	(0.0129)	(0.00345)	(0.0130)	(0.00347)	(0.0129)	(0.00343)	(0.0131)	(0.0131)
Constant	0.881***		0.895***		0.858***		0.828***	0.828***
	(0.286)		(0.286)		(0.284)		(0.289)	(0.289)

Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 8. Estimated Logit coefficients and Odds ratios.

Dependent variable: Dependent variable: In your opinion, how serious is TB diseases? (1 if chosen "i. Very serious" or "ii. Somewhat serious", 0 if "iii. Not very serious").

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	0.0232	1.023						
	(0.270)	(0.276)						
Pamphlets without picture	-0.224	0.800						
	(0.260)	(0.208)						
Received any type of pamphlet			-0.105	0.901				
			(0.231)	(0.208)				
Respondent received a pamphlet					0.218	1.244		
					(0.220)	(0.274)		
Number of pamphlets per household							0.270	1.310
							(0.575)	(0.753)
Distance to health facility or hospital (km)	-0.00665	0.993	-0.00721	0.993	-0.00835	0.992	-0.00701	0.993
	(0.00743)	(0.00738)	(0.00751)	(0.00745)	(0.00767)	(0.00761)	(0.00769)	(0.00763)
Have a TB patient in family or locality	0.0563	1.058	0.0442	1.045	0.00837	1.008	0.0176	1.018
	(0.228)	(0.241)	(0.227)	(0.237)	(0.229)	(0.231)	(0.229)	(0.233)
How often seeks health care (1=Often)	0.440*	1.553*	0.418*	1.519*	0.425*	1.530*	0.382	1.466
	(0.240)	(0.372)	(0.238)	(0.361)	(0.237)	(0.363)	(0.237)	(0.347)
Age (years)	0.0143	1.014	0.0140	1.014	0.0131	1.013	0.0146	1.015
	(0.0105)	(0.0106)	(0.0104)	(0.0106)	(0.0104)	(0.0105)	(0.0104)	(0.0105)
Household size (persons)	-0.0152*	0.985*	-0.0148*	0.985*	-0.0144*	0.986*	-0.0148*	0.985*
	(0.00842)	(0.00830)	(0.00839)	(0.00827)	(0.00854)	(0.00842)	(0.00848)	(0.00835)
Married	-0.324	0.724	-0.329	0.720	-0.329	0.720	-0.342	0.710
	(0.308)	(0.223)	(0.307)	(0.221)	(0.308)	(0.222)	(0.307)	(0.218)
Years of education	-0.0174	0.983	-0.0170	0.983	-0.0211	0.979	-0.0154	0.985
	(0.0228)	(0.0224)	(0.0229)	(0.0225)	(0.0226)	(0.0221)	(0.0229)	(0.0226)
Constant	1.435***	4.199***	1.464***	4.321***	1.384***	3.990***	1.336***	3.805***
	(0.503)	(2.113)	(0.503)	(2.175)	(0.505)	(2.014)	(0.515)	(1.959)

Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 9. Estimated OLS coefficients.

Dependent variable: How can a person be infected by TB? (1 if chosen "ii. Through the air when a person with TB coughs or sneezes", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	0.0541			
	(0.0444)			
Pamphlets without picture	0.0633			
	(0.0442)			
Received any type of pamphlet		0.0588		
		(0.0385)		
Respondent received a pamphlet			0.0505	
			(0.0380)	
Number of pamphlets per household				0.0806
				(0.0913)
Distance to health facility or hospital (km)	-0.00170	-0.00168	-0.00179	-0.00143
	(0.00163)	(0.00164)	(0.00161)	(0.00160)
Have a TB patient in family or locality	-0.0405	-0.0401	-0.0439	-0.0179
	(0.0373)	(0.0374)	(0.0383)	(0.0379)
How often seeks health care (1=Often)	-0.0155	-0.0148	-0.00865	-0.00899
	(0.0417)	(0.0416)	(0.0413)	(0.0416)
Age (years)	0.00204	0.00205	0.00195	0.00203
	(0.00167)	(0.00167)	(0.00165)	(0.00166)
Household size (persons)	-0.000278	-0.000291	-0.000251	-0.000141
	(0.00197)	(0.00197)	(0.00198)	(0.00196)
Married	-0.117**	-0.117**	-0.116**	-0.125**
	(0.0537)	(0.0536)	(0.0534)	(0.0541)
Years of education	-0.00765*	-0.00766*	-0.00763*	-0.00656
	(0.00405)	(0.00405)	(0.00408)	(0.00408)
Constant	0.335***	0.334***	0.353***	0.339***
	(0.0901)	(0.0904)	(0.0893)	(0.0903)
Observations	578	578	579	567
R-squared	0.023	0.023	0.022	0.019

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 10. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: How can a person be infected by TB? (1 if chosen "ii. Through the air when a person with TB coughs or sneezes", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	0.160	0.0490						
	(0.144)	(0.0438)						
Pamphlets without picture	0.196	0.0605						
	(0.143)	(0.0439)						
Received any type of pamphlet			0.179	0.0561				
			(0.126)	(0.0396)				
Respondent received a pamphlet					0.151	0.0473		
					(0.119)	(0.0373)		
Number of pamphlets per household							0.238	0.238
							(0.275)	(0.275)
Distance to health facility or hospital (km)	-0.00514	-0.00162	-0.00504	-0.00159	-0.00548	-0.00172	-0.00440	-0.00440
	(0.00507)	(0.00159)	(0.00509)	(0.00160)	(0.00502)	(0.00158)	(0.00498)	(0.00498)
Have a TB patient in family or locality	-0.129	-0.0406	-0.127	-0.0401	-0.136	-0.0427	-0.0557	-0.0557
	(0.122)	(0.0383)	(0.122)	(0.0384)	(0.125)	(0.0391)	(0.123)	(0.123)
How often seeks health care (1=Often)	-0.0423	-0.0133	-0.0397	-0.0125	-0.0215	-0.00675	-0.0207	-0.0207
	(0.131)	(0.0411)	(0.130)	(0.0410)	(0.130)	(0.0407)	(0.131)	(0.131)
Age (years)	0.00646	0.00203	0.00650	0.00204	0.00626	0.00197	0.00646	0.00646
	(0.00520)	(0.00163)	(0.00520)	(0.00164)	(0.00518)	(0.00163)	(0.00522)	(0.00522)
Household size (persons)	-0.000482	-0.000152	-0.000521	-0.000164	-0.000397	-0.000125	-6.74e-05	-6.74e-05
	(0.00606)	(0.00190)	(0.00606)	(0.00190)	(0.00607)	(0.00191)	(0.00598)	(0.00598)
Married	-0.364**	-0.114**	-0.363**	-0.114**	-0.359**	-0.113**	-0.389**	-0.389**
	(0.164)	(0.0514)	(0.164)	(0.0514)	(0.164)	(0.0513)	(0.165)	(0.165)
Years of education	-0.0238*	-0.00748*	-0.0238*	-0.00750*	-0.0237*	-0.00745*	-0.0208	-0.0208
	(0.0129)	(0.00405)	(0.0129)	(0.00405)	(0.0130)	(0.00407)	(0.0131)	(0.0131)
Constant	-0.437		-0.442		-0.384		-0.422	-0.422
	(0.276)		(0.277)		(0.271)		(0.273)	(0.273)

Observations	578	578	578	578	579	579	567	567

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 11. Estimated Logit coefficients and Odds ratios.

Dependent variable: How can a person be infected by TB? (1 if chosen "ii. Through the air when a person with TB coughs or sneezes", 0 otherwise).

VARIABLES	1 Logit	2 Odds Ratio	3 Logit	4 Odds Ratio	5 Logit	6 Odds Ratio	7 Logit	8 Odds Ratio
Pamphlets with picture	0.301	1.351						
	(0.248)	(0.336)						
Pamphlets without picture	0.346	1.414						
	(0.246)	(0.348)						
Received any type of pamphlet			0.324	1.383				
			(0.219)	(0.303)				
Respondent received a pamphlet					0.270	1.310		
					(0.202)	(0.265)		
Number of pamphlets per household							0.430	1.537
							(0.459)	(0.705)
Distance to health facility or hospital (km)	-0.00954	0.991	-0.00945	0.991	-0.00988	0.990	-0.00793	0.992
	(0.00997)	(0.00988)	(0.0100)	(0.00994)	(0.00970)	(0.00960)	(0.00951)	(0.00943)
Have a TB patient in family or locality	-0.224	0.800	-0.222	0.801	-0.243	0.784	-0.0981	0.907
	(0.208)	(0.166)	(0.208)	(0.167)	(0.214)	(0.168)	(0.209)	(0.190)
How often seeks health care (1=Often)	-0.0859	0.918	-0.0825	0.921	-0.0539	0.947	-0.0525	0.949
	(0.220)	(0.202)	(0.219)	(0.202)	(0.218)	(0.206)	(0.221)	(0.210)
Age (years)	0.0108	1.011	0.0109	1.011	0.0104	1.010	0.0109	1.011
	(0.00865)	(0.00874)	(0.00866)	(0.00875)	(0.00861)	(0.00870)	(0.00872)	(0.00881)
Household size (persons)	-0.00153	0.998	-0.00163	0.998	-0.00136	0.999	-0.000682	0.999
	(0.0112)	(0.0111)	(0.0111)	(0.0111)	(0.0111)	(0.0111)	(0.0108)	(0.0108)
Married	-0.630**	0.533**	-0.629**	0.533**	-0.619**	0.538**	-0.671**	0.511**
	(0.278)	(0.148)	(0.278)	(0.148)	(0.278)	(0.150)	(0.280)	(0.143)
Years of education	-0.0424*	0.958*	-0.0425*	0.958*	-0.0423*	0.959*	-0.0368	0.964
	(0.0226)	(0.0216)	(0.0226)	(0.0216)	(0.0227)	(0.0218)	(0.0229)	(0.0221)
Constant	-0.659	0.518	-0.663	0.515	-0.556	0.574	-0.632	0.532
	(0.474)	(0.245)	(0.476)	(0.245)	(0.468)	(0.268)	(0.469)	(0.249)

Observations	578	578	578	578	579	579	567	567

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 12. Estimated OLS coefficients.

Dependent variable: In your opinion, who can be infected with TB in village/community? (1 if chosen "i. Relatives of TB Patients", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	-0.00349			
	(0.0489)			
Pamphlets without picture	0.00832			
	(0.0487)			
Received any type of pamphlet		0.00256		
		(0.0421)		
Respondent received a pamphlet			0.0766*	
			(0.0407)	
Number of pamphlets per household				-0.0654
				(0.0991)
Distance to health facility or hospital (km)	-0.000607	-0.000586	-0.000893	-0.000187
	(0.00158)	(0.00158)	(0.00160)	(0.00159)
Have a TB patient in family or locality	0.157***	0.157***	0.148***	0.152***
	(0.0414)	(0.0414)	(0.0417)	(0.0421)
How often seeks health care (1=Often)	0.0949**	0.0959**	0.101**	0.0946**
	(0.0465)	(0.0464)	(0.0461)	(0.0467)
Age (years)	0.00268	0.00270	0.00243	0.00310*
	(0.00177)	(0.00177)	(0.00175)	(0.00178)
Household size (persons)	-0.00102	-0.00104	-0.000879	-0.000970
	(0.00190)	(0.00190)	(0.00191)	(0.00191)
Married	-0.0115	-0.0113	-0.0100	-0.0130
	(0.0589)	(0.0588)	(0.0584)	(0.0594)
Years of education	-0.00396	-0.00397	-0.00503	-0.00269
	(0.00432)	(0.00432)	(0.00428)	(0.00440)
Constant	0.426***	0.424***	0.413***	0.409***
	(0.0955)	(0.0952)	(0.0934)	(0.0943)
Observations	602	602	603	591
R-squared	0.042	0.042	0.048	0.041

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 13. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: In your opinion, who can be infected with TB in village/community? (1 if chosen "i. Relatives of TB Patients", 0 otherwise).

VARIABLES	1 Probit	2 Marginal Effect	3 Probit	4 Marginal Effect	5 Probit	6 Marginal Effect	7 Probit	8 Marginal Effect
Pamphlets with picture	-0.0119	-0.00462						
	(0.129)	(0.0502)						
Pamphlets without picture	0.0148	0.00574						
	(0.128)	(0.0499)						
Received any type of pamphlet			0.00179	0.000696				
			(0.111)	(0.0432)				
Respondent received a pamphlet					0.208*	0.0808*		
					(0.110)	(0.0427)		
Number of pamphlets per household							-0.179	-0.179
							(0.256)	(0.256)
Distance to health facility or hospital (km)	-0.00169	-0.000658	-0.00165	-0.000640	-0.00255	-0.000992	-0.000577	-0.000577
	(0.00409)	(0.00159)	(0.00408)	(0.00159)	(0.00414)	(0.00161)	(0.00410)	(0.00410)
Have a TB patient in family or locality	0.418***	0.163***	0.419***	0.163***	0.395***	0.154***	0.403***	0.403***
	(0.112)	(0.0437)	(0.112)	(0.0437)	(0.113)	(0.0440)	(0.114)	(0.114)
How often seeks health care (1=Often)	0.249**	0.0967**	0.251**	0.0977**	0.266**	0.103**	0.247**	0.247**
	(0.122)	(0.0473)	(0.121)	(0.0472)	(0.122)	(0.0472)	(0.122)	(0.122)
Age (years)	0.00761	0.00296	0.00764	0.00297	0.00691	0.00269	0.00868*	0.00868*
	(0.00494)	(0.00192)	(0.00494)	(0.00192)	(0.00493)	(0.00192)	(0.00495)	(0.00495)
Household size (persons)	-0.00271	-0.00105	-0.00275	-0.00107	-0.00226	-0.000878	-0.00257	-0.00257
	(0.00495)	(0.00192)	(0.00494)	(0.00192)	(0.00497)	(0.00193)	(0.00496)	(0.00496)
Married	-0.0355	-0.0138	-0.0352	-0.0137	-0.0328	-0.0128	-0.0401	-0.0401
	(0.152)	(0.0592)	(0.152)	(0.0592)	(0.152)	(0.0592)	(0.153)	(0.153)
Years of education	-0.0101	-0.00394	-0.0102	-0.00396	-0.0134	-0.00520	-0.00687	-0.00687
	(0.0114)	(0.00442)	(0.0114)	(0.00442)	(0.0114)	(0.00442)	(0.0115)	(0.0115)
Constant	-0.208		-0.211		-0.243		-0.251	-0.251
	(0.252)		(0.251)		(0.247)		(0.248)	(0.248)
Observations	602	602	602	602	603	603	591	591

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 14. Estimated Logit coefficients and Odds ratios.

Dependent variable: In your opinion, who can be infected with TB in village/community? (1 if chosen "i. Relatives of TB Patients", 0 otherwise).

VARIABLES	1 Logit	2 Odds Ratio	3 Logit	4 Odds Ratio	5 Logit	6 Odds Ratio	7 Logit	8 Odds Ratio
Pamphlets with picture	-0.0128	0.987						
	(0.207)	(0.204)						
Pamphlets without picture	0.0355	1.036						
	(0.208)	(0.216)						
Received any type of pamphlet			0.0118	1.012				
			(0.179)	(0.181)				
Respondent received a pamphlet					0.334*	1.397*		
					(0.178)	(0.249)		
Number of pamphlets per household							-0.276	0.759
							(0.411)	(0.311)
Distance to health facility or hospital (km)	-0.00264	0.997	-0.00255	0.997	-0.00395	0.996	-0.000863	0.999
	(0.00668)	(0.00667)	(0.00666)	(0.00664)	(0.00683)	(0.00680)	(0.00669)	(0.00668)
Have a TB patient in family or locality	0.678***	1.970***	0.680***	1.974***	0.643***	1.902***	0.652***	1.920***
	(0.184)	(0.363)	(0.184)	(0.363)	(0.186)	(0.353)	(0.186)	(0.357)
How often seeks health care (1=Often)	0.404**	1.497**	0.408**	1.504**	0.431**	1.538**	0.401**	1.493**
	(0.196)	(0.293)	(0.195)	(0.294)	(0.196)	(0.302)	(0.196)	(0.293)
Age (years)	0.0122	1.012	0.0123	1.012	0.0112	1.011	0.0139*	1.014*
	(0.00803)	(0.00812)	(0.00801)	(0.00811)	(0.00798)	(0.00807)	(0.00801)	(0.00812)
Household size (persons)	-0.00431	0.996	-0.00439	0.996	-0.00373	0.996	-0.00410	0.996
	(0.00792)	(0.00789)	(0.00790)	(0.00787)	(0.00798)	(0.00795)	(0.00795)	(0.00792)
Married	-0.0605	0.941	-0.0600	0.942	-0.0550	0.946	-0.0670	0.935
	(0.246)	(0.232)	(0.246)	(0.232)	(0.246)	(0.233)	(0.247)	(0.231)
Years of education	-0.0168	0.983	-0.0168	0.983	-0.0216	0.979	-0.0114	0.989
	(0.0183)	(0.0180)	(0.0183)	(0.0180)	(0.0183)	(0.0179)	(0.0185)	(0.0183)
Constant	-0.338	0.713	-0.344	0.709	-0.393	0.675	-0.404	0.667
	(0.404)	(0.288)	(0.403)	(0.286)	(0.398)	(0.269)	(0.397)	(0.265)
Observations	602	602	602	602	603	603	591	591

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 15. Estimated OLS coefficients.

Dependent variable: How can someone with TB be cured? (1 if chosen "iv. Specific drugs given by health center" or "v. Under DOTS", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	-0.0461			
	(0.0374)			
Pamphlets without picture	-0.0130			
	(0.0343)			
Received any type of pamphlet		-0.0291		
		(0.0310)		
Respondent received a pamphlet			0.0347	
			(0.0293)	
Number of pamphlets per household				-0.0201
				(0.0665)
Distance to health facility or hospital (km)	-0.000122	-6.43e-05	-0.000227	7.44e-05
	(0.000892)	(0.000907)	(0.000898)	(0.000924)
Have a TB patient in family or locality	0.0577*	0.0590**	0.0520*	0.0612**
	(0.0294)	(0.0294)	(0.0293)	(0.0298)
How often seeks health care (1=Often)	0.114***	0.117***	0.117***	0.116***
	(0.0386)	(0.0384)	(0.0382)	(0.0386)
Age (years)	0.00329***	0.00333***	0.00320***	0.00340***
	(0.00124)	(0.00123)	(0.00123)	(0.00125)
Household size (persons)	-0.00419***	-0.00425***	-0.00416**	-0.00407**
	(0.00161)	(0.00163)	(0.00162)	(0.00162)
Married	-0.0250	-0.0244	-0.0254	-0.0359
	(0.0454)	(0.0454)	(0.0455)	(0.0456)
Years of education	0.00420	0.00415	0.00345	0.00424
	(0.00328)	(0.00328)	(0.00327)	(0.00337)
Constant	0.708***	0.705***	0.685***	0.690***
	(0.0762)	(0.0761)	(0.0744)	(0.0759)
Observations	602	602	603	591
R-squared	0.052	0.051	0.051	0.050

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 16. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: How can someone with TB be cured? (1 if chosen "iv. Specific drugs given by health center" or "v. Under DOTS", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	-0.201	-0.0464						
	(0.154)	(0.0356)						
Pamphlets without picture	-0.0462	-0.00977						
	(0.157)	(0.0333)						
Received any type of pamphlet			-0.127	-0.0288				
			(0.136)	(0.0308)				
Respondent received a pamphlet					0.171	0.0385		
					(0.135)	(0.0305)		
Number of pamphlets per household							-0.0752	-0.0752
							(0.283)	(0.283)
Distance to health facility or hospital (km)	-0.000858	-0.000193	-0.000306	-6.93e-05	-0.00105	-0.000237	0.000381	0.000381
	(0.00409)	(0.000924)	(0.00418)	(0.000946)	(0.00420)	(0.000946)	(0.00424)	(0.00424)
Have a TB patient in family or locality	0.281**	0.0633**	0.286**	0.0646**	0.249*	0.0561*	0.295**	0.295**
	(0.138)	(0.0312)	(0.138)	(0.0312)	(0.139)	(0.0313)	(0.141)	(0.141)
How often seeks health care (1=Often)	0.460***	0.104***	0.472***	0.107***	0.479***	0.108***	0.469***	0.469***
	(0.141)	(0.0314)	(0.140)	(0.0313)	(0.140)	(0.0312)	(0.140)	(0.140)
Age (years)	0.0165**	0.00372**	0.0165**	0.00373**	0.0159**	0.00359**	0.0166**	0.0166**
	(0.00655)	(0.00146)	(0.00649)	(0.00145)	(0.00650)	(0.00145)	(0.00650)	(0.00650)
Household size (persons)	-0.0162***	-0.00366***	-0.0164***	-0.00372***	-0.0162***	-0.00364***	-0.0157***	-0.0157***
	(0.00563)	(0.00128)	(0.00568)	(0.00130)	(0.00564)	(0.00128)	(0.00563)	(0.00563)
Married	-0.132	-0.0298	-0.127	-0.0288	-0.131	-0.0295	-0.175	-0.175
	(0.184)	(0.0414)	(0.184)	(0.0415)	(0.184)	(0.0414)	(0.186)	(0.186)
Years of education	0.0180	0.00407	0.0177	0.00400	0.0142	0.00320	0.0178	0.0178
	(0.0141)	(0.00316)	(0.0140)	(0.00316)	(0.0141)	(0.00317)	(0.0143)	(0.0143)
Constant	0.415		0.402		0.312		0.338	0.338
	(0.314)		(0.313)		(0.301)		(0.306)	(0.306)

Observations	602	602	602	602	603	603	591	591

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 17. Estimated Logit coefficients and Odds ratios.

Dependent variable: How can someone with TB be cured? (1 if chosen "iv. Specific drugs given by health center" or "v. Under DOTS", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	-0.339	0.712						
	(0.280)	(0.200)						
Pamphlets without picture	-0.0696	0.933						
	(0.290)	(0.270)						
Received any type of pamphlet			-0.212	0.809				
			(0.249)	(0.201)				
Respondent received a pamphlet					0.291	1.338		
					(0.250)	(0.334)		
Number of pamphlets per household							-0.150	0.861
							(0.501)	(0.431)
Distance to health facility or hospital (km)	-0.000944	0.999	-0.000162	1.000	-0.00149	0.999	0.00114	1.001
	(0.00699)	(0.00698)	(0.00716)	(0.00716)	(0.00719)	(0.00718)	(0.00725)	(0.00726)
Have a TB patient in family or locality	0.484*	1.623*	0.495*	1.640*	0.442*	1.556*	0.521**	1.683**
	(0.257)	(0.416)	(0.256)	(0.421)	(0.258)	(0.402)	(0.262)	(0.442)
How often seeks health care (1=Often)	0.829***	2.292***	0.850***	2.340***	0.857***	2.357***	0.845***	2.327***
	(0.251)	(0.575)	(0.249)	(0.582)	(0.248)	(0.585)	(0.249)	(0.579)
Age (years)	0.0301**	1.031**	0.0303**	1.031**	0.0294**	1.030**	0.0305**	1.031**
	(0.0121)	(0.0124)	(0.0120)	(0.0123)	(0.0120)	(0.0124)	(0.0119)	(0.0123)
Household size (persons)	-0.0271***	0.973***	-0.0274***	0.973***	-0.0269***	0.973***	-0.0263***	0.974***
	(0.00988)	(0.00961)	(0.0100)	(0.00977)	(0.00990)	(0.00964)	(0.00988)	(0.00962)
Married	-0.246	0.782	-0.244	0.784	-0.253	0.777	-0.326	0.722
	(0.336)	(0.262)	(0.335)	(0.263)	(0.337)	(0.262)	(0.339)	(0.245)
Years of education	0.0342	1.035	0.0333	1.034	0.0283	1.029	0.0341	1.035
	(0.0259)	(0.0268)	(0.0257)	(0.0266)	(0.0261)	(0.0268)	(0.0263)	(0.0272)
Constant	0.562	1.754	0.543	1.720	0.384	1.468	0.432	1.540
	(0.573)	(1.004)	(0.572)	(0.983)	(0.545)	(0.800)	(0.553)	(0.851)

Observations	602	602	602	602	603	603	591	591

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 18. Estimated OLS coefficients.

Dependent variable: How can a person be protected from getting TB? (1 if chosen "vi. Through good nutrition", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	-0.0323			
	(0.0319)			
Pamphlets without picture	-0.0299			
	(0.0315)			
Received any type of pamphlet		-0.0311		
		(0.0281)		
Respondent received a pamphlet			0.0558**	
			(0.0275)	
Number of pamphlets per household				0.0520
				(0.0611)
Distance to health facility or hospital (km)	-0.000180	-0.000175	-0.000384	-0.000358
	(0.00110)	(0.00110)	(0.00107)	(0.00109)
Have a TB patient in family or locality	0.00655	0.00665	-0.00447	0.00534
	(0.0272)	(0.0270)	(0.0270)	(0.0277)
How often seeks health care (1=Often)	-0.116***	-0.116***	-0.116***	-0.119***
	(0.0356)	(0.0354)	(0.0353)	(0.0358)
Age (years)	0.000408	0.000411	0.000254	0.000260
	(0.000897)	(0.000894)	(0.000909)	(0.000916)
Household size (persons)	0.000141	0.000137	0.000264	0.000126
	(0.000943)	(0.000939)	(0.000948)	(0.000948)
Married	-0.0359	-0.0358	-0.0373	-0.0366
	(0.0365)	(0.0366)	(0.0361)	(0.0369)
Years of education	-0.00301	-0.00302	-0.00383	-0.00369
	(0.00261)	(0.00260)	(0.00261)	(0.00267)
Constant	0.247***	0.247***	0.221***	0.234***
	(0.0586)	(0.0587)	(0.0571)	(0.0582)
Observations	603	603	604	592
R-squared	0.035	0.035	0.040	0.034

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 19. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: How can a person be protected from getting TB? (1 if chosen "vi. Through good nutrition", 0 otherwise).

VARIABLES	1 Probit	2 Marginal Effect	3 Probit	4 Marginal Effect	5 Probit	6 Marginal Effect	7 Probit	8 Marginal Effect
Pamphlets with picture	-0.174	-0.0309						
	(0.170)	(0.0301)						
Pamphlets without picture	-0.157	-0.0280						
	(0.169)	(0.0303)						
Received any type of pamphlet			-0.165	-0.0283				
			(0.144)	(0.0246)				
Respondent received a pamphlet					0.320**	0.0539**		
					(0.143)	(0.0241)		
Number of pamphlets per household							0.295	0.295
							(0.310)	(0.310)
Distance to health facility or hospital (km)	-0.000790	-0.000135	-0.000755	-0.000129	-0.00240	-0.000403	-0.00198	-0.00198
	(0.00624)	(0.00107)	(0.00623)	(0.00107)	(0.00589)	(0.000993)	(0.00605)	(0.00605)
Have a TB patient in family or locality	0.0610	0.0105	0.0614	0.0105	-0.00486	-0.000819	0.0568	0.0568
	(0.150)	(0.0259)	(0.150)	(0.0258)	(0.152)	(0.0256)	(0.151)	(0.151)
How often seeks health care (1=Often)	-0.560***	-0.0960***	-0.559***	-0.0958***	-0.565***	-0.0951***	-0.569***	-0.569***
	(0.148)	(0.0254)	(0.148)	(0.0252)	(0.148)	(0.0248)	(0.148)	(0.148)
Age (years)	0.00172	0.000294	0.00173	0.000296	0.00126	0.000212	0.00115	0.00115
	(0.00540)	(0.000923)	(0.00539)	(0.000922)	(0.00550)	(0.000926)	(0.00541)	(0.00541)
Household size (persons)	0.000845	0.000145	0.000813	0.000139	0.00131	0.000220	0.000901	0.000901
	(0.00579)	(0.000993)	(0.00578)	(0.000990)	(0.00587)	(0.000988)	(0.00579)	(0.00579)
Married	-0.218	-0.0373	-0.217	-0.0372	-0.224	-0.0377	-0.215	-0.215
	(0.199)	(0.0341)	(0.200)	(0.0342)	(0.200)	(0.0336)	(0.199)	(0.199)
Years of education	-0.0173	-0.00296	-0.0173	-0.00296	-0.0228	-0.00384	-0.0214	-0.0214
	(0.0152)	(0.00260)	(0.0152)	(0.00260)	(0.0152)	(0.00255)	(0.0154)	(0.0154)
Constant	-0.559*		-0.561*		-0.712**		-0.649**	-0.649**
	(0.298)		(0.299)		(0.295)		(0.294)	(0.294)
Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 20. Estimated Logit coefficients and Odds ratios.

Dependent variable: How can a person be protected from getting TB? (1 if chosen "vi. Through good nutrition", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	-0.325	0.723						
	(0.326)	(0.236)						
Pamphlets without picture	-0.313	0.731						
	(0.331)	(0.242)						
Received any type of pamphlet			-0.319	0.727				
			(0.275)	(0.200)				
Respondent received a pamphlet					0.591**	1.806**		
					(0.277)	(0.500)		
Number of pamphlets per household							0.560	1.750
							(0.575)	(1.007)
Distance to health facility or hospital (km)	-0.00233	0.998	-0.00230	0.998	-0.00398	0.996	-0.00386	0.996
	(0.0135)	(0.0134)	(0.0134)	(0.0134)	(0.0121)	(0.0121)	(0.0129)	(0.0129)
Have a TB patient in family or locality	0.0479	1.049	0.0482	1.049	-0.0726	0.930	0.0490	1.050
	(0.298)	(0.312)	(0.297)	(0.312)	(0.302)	(0.281)	(0.297)	(0.312)
How often seeks health care (1=Often)	-1.042***	0.353***	-1.042***	0.353***	-1.051***	0.349***	-1.063***	0.345***
	(0.279)	(0.0985)	(0.277)	(0.0979)	(0.278)	(0.0970)	(0.278)	(0.0961)
Age (years)	0.00471	1.005	0.00472	1.005	0.00334	1.003	0.00344	1.003
	(0.00973)	(0.00978)	(0.00971)	(0.00975)	(0.00995)	(0.00998)	(0.00967)	(0.00970)
Household size (persons)	0.00153	1.002	0.00150	1.002	0.00256	1.003	0.00169	1.002
	(0.0109)	(0.0109)	(0.0108)	(0.0109)	(0.0110)	(0.0110)	(0.0108)	(0.0108)
Married	-0.396	0.673	-0.396	0.673	-0.410	0.664	-0.402	0.669
	(0.383)	(0.258)	(0.384)	(0.258)	(0.382)	(0.254)	(0.379)	(0.254)
Years of education	-0.0336	0.967	-0.0336	0.967	-0.0428	0.958	-0.0399	0.961
	(0.0293)	(0.0284)	(0.0291)	(0.0282)	(0.0288)	(0.0276)	(0.0291)	(0.0280)
Constant	-0.880	0.415	-0.880	0.415	-1.175**	0.309**	-1.054**	0.349**
	(0.546)	(0.227)	(0.547)	(0.227)	(0.536)	(0.165)	(0.532)	(0.185)
Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 21. Estimated OLS coefficients.

Dependent variable: Which of the following statements is true according to your information: (1 if chosen "a. The government has started a program for TB diagnosis in FATA" or "b. The government has started a program for TB diagnosis and treatment in FATA", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	-0.0685			
	(0.0502)			
Pamphlets without picture	0.00300			
	(0.0493)			
Received any type of pamphlet		-0.0320		
		(0.0432)		
Respondent received a pamphlet			0.118***	
			(0.0413)	
Number of pamphlets per household				-0.0178
				(0.0972)
Distance to health facility or hospital (km)	0.00482***	0.00495***	0.00440***	0.00502***
	(0.00120)	(0.00120)	(0.00120)	(0.00123)
Have a TB patient in family or locality	0.0273	0.0302	0.0127	0.0265
	(0.0423)	(0.0423)	(0.0422)	(0.0427)
How often seeks health care (1=Often)	0.0409	0.0467	0.0521	0.0470
	(0.0476)	(0.0476)	(0.0481)	(0.0478)
Age (years)	-0.00347*	-0.00339*	-0.00387**	-0.00346*
	(0.00192)	(0.00194)	(0.00190)	(0.00194)
Household size (persons)	-0.00384*	-0.00395*	-0.00364*	-0.00384*
	(0.00202)	(0.00203)	(0.00205)	(0.00205)
Married	0.0917	0.0934	0.0943	0.0896
	(0.0597)	(0.0595)	(0.0595)	(0.0601)
Years of education	0.00617	0.00605	0.00421	0.00573
	(0.00433)	(0.00435)	(0.00430)	(0.00440)
Constant	0.561***	0.554***	0.518***	0.539***
	(0.0984)	(0.0989)	(0.0962)	(0.0983)
Observations	598	598	599	587
R-squared	0.041	0.037	0.049	0.037

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 22. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: Which of the following statements is true according to your information: (1 if chosen "a. The government has started a program for TB diagnosis in FATA" or "b. The government has started a program for TB diagnosis and treatment in FATA", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	-0.182	-0.0718						
	(0.130)	(0.0511)						
Pamphlets without picture	0.00623	0.00242						
	(0.129)	(0.0502)						
Received any type of pamphlet			-0.0866	-0.0340				
			(0.112)	(0.0443)				
Respondent received a pamphlet					0.318***	0.125***		
					(0.110)	(0.0432)		
Number of pamphlets per household							-0.0403	-0.0403
							(0.254)	(0.254)
Distance to health facility or hospital (km)	0.0140***	0.00550***	0.0142***	0.00560***	0.0132***	0.00521***	0.0144***	0.0144***
	(0.00392)	(0.00154)	(0.00392)	(0.00154)	(0.00400)	(0.00157)	(0.00397)	(0.00397)
Have a TB patient in family or locality	0.0726	0.0286	0.0800	0.0315	0.0336	0.0132	0.0707	0.0707
	(0.111)	(0.0435)	(0.110)	(0.0434)	(0.111)	(0.0437)	(0.111)	(0.111)
How often seeks health care (1=Often)	0.104	0.0408	0.119	0.0468	0.137	0.0537	0.119	0.119
	(0.122)	(0.0481)	(0.122)	(0.0480)	(0.124)	(0.0486)	(0.122)	(0.122)
Age (years)	-0.00893*	-0.00351*	-0.00869*	-0.00342*	-0.0101**	-0.00396**	-0.00885*	-0.00885*
	(0.00502)	(0.00197)	(0.00503)	(0.00198)	(0.00500)	(0.00197)	(0.00505)	(0.00505)
Household size (persons)	-0.0100*	-0.00394*	-0.0103**	-0.00404**	-0.00950*	-0.00373*	-0.00995*	-0.00995*
	(0.00522)	(0.00205)	(0.00522)	(0.00206)	(0.00532)	(0.00209)	(0.00527)	(0.00527)
Married	0.235	0.0925	0.238	0.0938	0.241	0.0949	0.227	0.227
	(0.154)	(0.0604)	(0.153)	(0.0602)	(0.154)	(0.0605)	(0.154)	(0.154)
Years of education	0.0162	0.00635	0.0158	0.00622	0.0107	0.00422	0.0149	0.0149
	(0.0114)	(0.00447)	(0.0114)	(0.00448)	(0.0114)	(0.00448)	(0.0115)	(0.0115)
Constant	0.148		0.129		0.0334		0.0891	0.0891
	(0.255)		(0.255)		(0.250)		(0.253)	(0.253)

Observations	598	598	598	598	599	599	587	587

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 23. Estimated Logit coefficients and Odds ratios.

Dependent variable: Which of the following statements is true according to your information: (1 if chosen "a. The government has started a program for TB diagnosis in FATA" or "b. The government has started a program for TB diagnosis and treatment in FATA", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	-0.285	0.752						
	(0.209)	(0.157)						
Pamphlets without picture	0.0154	1.015						
	(0.209)	(0.212)						
Received any type of pamphlet			-0.133	0.875				
			(0.181)	(0.159)				
Respondent received a pamphlet					0.511***	1.667***		
					(0.178)	(0.296)		
Number of pamphlets per household							-0.0652	0.937
							(0.404)	(0.379)
Distance to health facility or hospital (km)	0.0221***	1.022***	0.0225***	1.023***	0.0210***	1.021***	0.0229***	1.023***
	(0.00633)	(0.00647)	(0.00633)	(0.00647)	(0.00650)	(0.00663)	(0.00642)	(0.00657)
Have a TB patient in family or locality	0.116	1.123	0.128	1.136	0.0549	1.056	0.113	1.120
	(0.178)	(0.200)	(0.178)	(0.202)	(0.180)	(0.190)	(0.179)	(0.201)
How often seeks health care (1=Often)	0.168	1.183	0.192	1.212	0.218	1.244	0.193	1.213
	(0.196)	(0.232)	(0.196)	(0.237)	(0.200)	(0.249)	(0.196)	(0.238)
Age (years)	-0.0145*	0.986*	-0.0141*	0.986*	-0.0164**	0.984**	-0.0144*	0.986*
	(0.00811)	(0.00799)	(0.00815)	(0.00804)	(0.00806)	(0.00793)	(0.00817)	(0.00805)
Household size (persons)	-0.0162*	0.984*	-0.0167*	0.983*	-0.0156*	0.985*	-0.0162*	0.984*
	(0.00861)	(0.00847)	(0.00863)	(0.00849)	(0.00888)	(0.00874)	(0.00871)	(0.00857)
Married	0.382	1.466	0.387	1.473	0.395	1.485	0.370	1.448
	(0.249)	(0.365)	(0.248)	(0.366)	(0.250)	(0.372)	(0.250)	(0.362)
Years of education	0.0256	1.026	0.0251	1.025	0.0173	1.017	0.0238	1.024
	(0.0183)	(0.0187)	(0.0183)	(0.0188)	(0.0183)	(0.0186)	(0.0185)	(0.0190)
Constant	0.241	1.273	0.212	1.236	0.0625	1.064	0.151	1.163
	(0.411)	(0.523)	(0.412)	(0.509)	(0.404)	(0.430)	(0.408)	(0.475)

Observations	598	598	598	598	599	599	587	587

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 24. Estimated OLS coefficients.

Dependent variable: TB disease is 100% curable but takes time with regular treatment. How long does it take to cure TB completely with regular treatment? (1 if chosen "b. 6 months" or "c. 8 months", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	0.0745*			
	(0.0427)			
Pamphlets without picture	0.0223			
	(0.0443)			
Received any type of pamphlet		0.0479		
		(0.0383)		
Respondent received a pamphlet			-0.0418	
			(0.0372)	
Number of pamphlets per household				-0.0646
				(0.0872)
Distance to health facility or hospital (km)	0.00189*	0.00179*	0.00194*	0.00214*
	(0.00111)	(0.00108)	(0.00112)	(0.00113)
Have a TB patient in family or locality	0.00768	0.00538	0.0169	0.00670
	(0.0372)	(0.0371)	(0.0377)	(0.0380)
How often seeks health care (1=Often)	0.0963**	0.0916**	0.0943**	0.0940**
	(0.0434)	(0.0433)	(0.0430)	(0.0435)
Age (years)	-0.00133	-0.00140	-0.00131	-0.00108
	(0.00174)	(0.00174)	(0.00172)	(0.00174)
Household size (persons)	0.000335	0.000416	0.000316	0.000438
	(0.00139)	(0.00139)	(0.00139)	(0.00138)
Married	0.0230	0.0222	0.0247	0.0210
	(0.0510)	(0.0510)	(0.0510)	(0.0517)
Years of education	0.00788**	0.00797**	0.00861**	0.00935**
	(0.00374)	(0.00373)	(0.00368)	(0.00382)
Constant	0.596***	0.603***	0.636***	0.616***
	(0.0861)	(0.0858)	(0.0829)	(0.0847)
Observations	601	601	602	590
R-squared	0.031	0.028	0.027	0.028

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 25. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: TB disease is 100% curable but takes time with regular treatment. How long does it take to cure TB completely with regular treatment? (1 if chosen "b. 6 months" or "c. 8 months", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	0.249*	0.0756*						
	(0.141)	(0.0426)						
Pamphlets without picture	0.0636	0.0206						
	(0.137)	(0.0444)						
Received any type of pamphlet			0.151	0.0467				
			(0.119)	(0.0368)				
Respondent received a pamphlet					-0.133	-0.0412		
					(0.118)	(0.0365)		
Number of pamphlets per household							-0.202	-0.202
							(0.271)	(0.271)
Distance to health facility or hospital (km)	0.00659	0.00203	0.00632	0.00195	0.00656	0.00203	0.00724*	0.00724*
	(0.00425)	(0.00131)	(0.00418)	(0.00129)	(0.00420)	(0.00130)	(0.00425)	(0.00425)
Have a TB patient in family or locality	0.0288	0.00888	0.0211	0.00653	0.0568	0.0175	0.0239	0.0239
	(0.121)	(0.0375)	(0.121)	(0.0374)	(0.123)	(0.0379)	(0.122)	(0.122)
How often seeks health care (1=Often)	0.301**	0.0928**	0.281**	0.0869**	0.288**	0.0890**	0.286**	0.286**
	(0.128)	(0.0394)	(0.127)	(0.0393)	(0.126)	(0.0390)	(0.128)	(0.128)
Age (years)	-0.00407	-0.00126	-0.00421	-0.00130	-0.00392	-0.00121	-0.00326	-0.00326
	(0.00537)	(0.00166)	(0.00536)	(0.00166)	(0.00531)	(0.00164)	(0.00532)	(0.00532)
Household size (persons)	0.00176	0.000542	0.00210	0.000649	0.00186	0.000573	0.00217	0.00217
	(0.00508)	(0.00157)	(0.00509)	(0.00158)	(0.00508)	(0.00157)	(0.00506)	(0.00506)
Married	0.0768	0.0237	0.0718	0.0222	0.0817	0.0252	0.0705	0.0705
	(0.169)	(0.0521)	(0.169)	(0.0522)	(0.169)	(0.0521)	(0.169)	(0.169)
Years of education	0.0253**	0.00781**	0.0257**	0.00794**	0.0281**	0.00867**	0.0299**	0.0299**
	(0.0124)	(0.00381)	(0.0124)	(0.00381)	(0.0122)	(0.00376)	(0.0125)	(0.0125)
Constant	0.180		0.199		0.302		0.246	0.246
	(0.272)		(0.272)		(0.263)		(0.266)	(0.266)

Observations	601	601	601	601	602	602	590	590

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 26. Estimated Logit coefficients and Odds ratios.

Dependent variable: TB disease is 100% curable but takes time with regular treatment. How long does it take to cure TB completely with regular treatment? (1 if chosen "b. 6 months" or "c. 8 months", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	0.423*	1.527*						
	(0.240)	(0.367)						
Pamphlets without picture	0.116	1.123						
	(0.233)	(0.261)						
Received any type of pamphlet			0.261	1.298				
			(0.201)	(0.261)				
Respondent received a pamphlet					-0.230	0.794		
					(0.202)	(0.160)		
Number of pamphlets per household							-0.350	0.704
							(0.453)	(0.319)
Distance to health facility or hospital (km)	0.0114	1.011	0.0108	1.011	0.0112	1.011	0.0124*	1.013*
	(0.00708)	(0.00716)	(0.00698)	(0.00706)	(0.00697)	(0.00705)	(0.00712)	(0.00721)
Have a TB patient in family or locality	0.0531	1.055	0.0413	1.042	0.103	1.108	0.0423	1.043
	(0.208)	(0.219)	(0.208)	(0.216)	(0.211)	(0.234)	(0.208)	(0.217)
How often seeks health care (1=Often)	0.505**	1.657**	0.477**	1.612**	0.493**	1.637**	0.486**	1.626**
	(0.214)	(0.354)	(0.213)	(0.343)	(0.211)	(0.345)	(0.213)	(0.346)
Age (years)	-0.00682	0.993	-0.00715	0.993	-0.00674	0.993	-0.00545	0.995
	(0.00914)	(0.00908)	(0.00911)	(0.00905)	(0.00900)	(0.00894)	(0.00897)	(0.00892)
Household size (persons)	0.00197	1.002	0.00268	1.003	0.00208	1.002	0.00271	1.003
	(0.00843)	(0.00845)	(0.00844)	(0.00846)	(0.00844)	(0.00846)	(0.00838)	(0.00841)
Married	0.127	1.136	0.125	1.133	0.139	1.149	0.119	1.126
	(0.293)	(0.333)	(0.292)	(0.331)	(0.292)	(0.335)	(0.291)	(0.328)
Years of education	0.0443**	1.045**	0.0449**	1.046**	0.0483**	1.049**	0.0517**	1.053**
	(0.0211)	(0.0220)	(0.0210)	(0.0220)	(0.0207)	(0.0217)	(0.0212)	(0.0223)
Constant	0.272	1.313	0.299	1.348	0.487	1.628	0.387	1.472
	(0.459)	(0.602)	(0.458)	(0.617)	(0.442)	(0.720)	(0.446)	(0.656)

Observations	601	601	601	601	602	602	590	590

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 27. Estimated OLS coefficients.

Dependent variable: What would you do if you thought you had signs/symptoms of TB? (1 if chosen "i. Go to nearby health facility in Agency/FR", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	-0.0395			
	(0.0355)			
Pamphlets without picture	-0.0202			
	(0.0322)			
Received any type of pamphlet		-0.0297		
		(0.0291)		
Respondent received a pamphlet			0.0502*	
			(0.0259)	
Number of pamphlets per household				-0.116
				(0.0734)
Distance to health facility or hospital (km)	-0.000871	-0.000837	-0.00104	-0.000588
	(0.00111)	(0.00111)	(0.00113)	(0.00109)
Have a TB patient in family or locality	0.0961***	0.0969***	0.0873***	0.0941***
	(0.0266)	(0.0264)	(0.0258)	(0.0269)
How often seeks health care (1=Often)	0.0848**	0.0864**	0.0867**	0.0858**
	(0.0362)	(0.0359)	(0.0357)	(0.0362)
Age (years)	0.00177	0.00179	0.00162	0.00195*
	(0.00110)	(0.00110)	(0.00109)	(0.00112)
Household size (persons)	-0.00274*	-0.00278*	-0.00266*	-0.00275*
	(0.00149)	(0.00148)	(0.00152)	(0.00147)
Married	-0.0274	-0.0270	-0.0279	-0.0294
	(0.0416)	(0.0415)	(0.0412)	(0.0423)
Years of education	-0.000830	-0.000859	-0.00169	-0.000584
	(0.00306)	(0.00305)	(0.00304)	(0.00314)
Constant	0.811***	0.809***	0.786***	0.801***
	(0.0716)	(0.0714)	(0.0689)	(0.0699)
Observations	603	603	604	592
R-squared	0.045	0.044	0.048	0.047

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 28. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: What would you do if you thought you had signs/symptoms of TB? (1 if chosen "i. Go to nearby health facility in Agency/FR", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	-0.201	-0.0403						
	(0.164)	(0.0333)						
Pamphlets without picture	-0.0713	-0.0133						
	(0.164)	(0.0304)						
Received any type of pamphlet			-0.139	-0.0278				
			(0.143)	(0.0286)				
Respondent received a pamphlet					0.279**	0.0549**		
					(0.139)	(0.0273)		
Number of pamphlets per household							-0.476*	-0.476*
							(0.284)	(0.284)
Distance to health facility or hospital (km)	-0.00362	-0.000719	-0.00318	-0.000634	-0.00455	-0.000896	-0.00192	-0.00192
	(0.00468)	(0.000927)	(0.00467)	(0.000928)	(0.00491)	(0.000966)	(0.00460)	(0.00460)
Have a TB patient in family or locality	0.525***	0.104***	0.526***	0.105***	0.474***	0.0935***	0.505***	0.505***
	(0.152)	(0.0299)	(0.153)	(0.0299)	(0.153)	(0.0295)	(0.154)	(0.154)
How often seeks health care (1=Often)	0.392***	0.0779***	0.402***	0.0801***	0.419***	0.0826***	0.394***	0.394***
	(0.149)	(0.0295)	(0.148)	(0.0294)	(0.147)	(0.0291)	(0.148)	(0.148)
Age (years)	0.0112*	0.00224*	0.0113*	0.00225*	0.0103	0.00202	0.0119*	0.0119*
	(0.00626)	(0.00125)	(0.00625)	(0.00125)	(0.00628)	(0.00124)	(0.00627)	(0.00627)
Household size (persons)	-0.0117**	-0.00232**	-0.0118**	-0.00236**	-0.0116**	-0.00229**	-0.0117**	-0.0117**
	(0.00541)	(0.00108)	(0.00539)	(0.00108)	(0.00548)	(0.00109)	(0.00536)	(0.00536)
Married	-0.144	-0.0286	-0.142	-0.0283	-0.158	-0.0311	-0.153	-0.153
	(0.190)	(0.0377)	(0.189)	(0.0377)	(0.189)	(0.0373)	(0.191)	(0.191)
Years of education	-0.000954	-0.000190	-0.00101	-0.000201	-0.00613	-0.00121	-0.000150	-0.000150
	(0.0144)	(0.00287)	(0.0144)	(0.00287)	(0.0146)	(0.00288)	(0.0146)	(0.0146)
Constant	0.767**		0.756**		0.665**		0.718**	0.718**
	(0.313)		(0.312)		(0.298)		(0.300)	(0.300)
Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 29. Estimated Logit coefficients and Odds ratios.

Dependent variable: What would you do if you thought you had signs/symptoms of TB? (1 if chosen "i. Go to nearby health facility in Agency/FR", 0 otherwise).

VARIABLES	1 Logit	2 Odds Ratio	3 Logit	4 Odds Ratio	5 Logit	6 Odds Ratio	7 Logit	8 Odds Ratio
Pamphlets with picture	-0.335	0.715						
	(0.307)	(0.220)						
Pamphlets without picture	-0.162	0.850						
	(0.307)	(0.261)						
Received any type of pamphlet			-0.253	0.777				
			(0.268)	(0.208)				
Respondent received a pamphlet					0.493*	1.636*		
					(0.263)	(0.430)		
Number of pamphlets per household							-0.891*	0.410*
							(0.493)	(0.202)
Distance to health facility or hospital (km)	-0.00716	0.993	-0.00662	0.993	-0.00890	0.991	-0.00436	0.996
	(0.00831)	(0.00825)	(0.00832)	(0.00827)	(0.00895)	(0.00887)	(0.00806)	(0.00803)
Have a TB patient in family or locality	0.976***	2.654***	0.984***	2.675***	0.902***	2.463***	0.949***	2.583***
	(0.306)	(0.812)	(0.304)	(0.814)	(0.304)	(0.749)	(0.307)	(0.792)
How often seeks health care (1=Often)	0.704***	2.021***	0.717***	2.049***	0.732***	2.080***	0.712***	2.037***
	(0.271)	(0.547)	(0.268)	(0.550)	(0.266)	(0.554)	(0.269)	(0.548)
Age (years)	0.0194*	1.020*	0.0196*	1.020*	0.0180	1.018	0.0209*	1.021*
	(0.0117)	(0.0119)	(0.0116)	(0.0119)	(0.0117)	(0.0119)	(0.0116)	(0.0119)
Household size (persons)	-0.0197**	0.981**	-0.0199**	0.980**	-0.0191**	0.981**	-0.0197**	0.980**
	(0.00911)	(0.00894)	(0.00909)	(0.00891)	(0.00936)	(0.00919)	(0.00899)	(0.00881)
Married	-0.274	0.760	-0.274	0.760	-0.286	0.751	-0.297	0.743
	(0.350)	(0.267)	(0.350)	(0.266)	(0.348)	(0.262)	(0.351)	(0.261)
Years of education	-0.00533	0.995	-0.00595	0.994	-0.0137	0.986	-0.00413	0.996
	(0.0270)	(0.0268)	(0.0267)	(0.0266)	(0.0274)	(0.0270)	(0.0272)	(0.0271)
Constant	1.315**	3.726**	1.300**	3.670**	1.105**	3.021**	1.231**	3.423**
	(0.589)	(2.195)	(0.586)	(2.151)	(0.546)	(1.649)	(0.550)	(1.881)
Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 30. Estimated OLS coefficients.

Dependent variable: If you had symptoms of TB, at what point would you go to the heath facility in Agency/FR? (1 if chosen "iii. As soon as I realise that my symptoms might be related to TB", 0 otherwise).

VARIABLES	1	2	3	4
Pamphlets with picture	0.0749			
	(0.0487)			
Pamphlets without picture	0.0684			
	(0.0465)			
Received any type of pamphlet		0.0716*		
		(0.0417)		
Respondent received a pamphlet			0.114***	
			(0.0382)	
Number of pamphlets per household				0.174*
				(0.0894)
Distance to health facility or hospital (km)	-0.00679***	-0.00680***	-0.00720***	-0.00682***
	(0.00149)	(0.00149)	(0.00149)	(0.00148)
Have a TB patient in family or locality	0.0917**	0.0915**	0.0822**	0.101**
	(0.0399)	(0.0397)	(0.0394)	(0.0402)
How often seeks health care (1=Often)	0.115**	0.115**	0.127***	0.115**
	(0.0460)	(0.0459)	(0.0458)	(0.0462)
Age (years)	0.00180	0.00180	0.00145	0.00184
	(0.00174)	(0.00173)	(0.00175)	(0.00176)
Household size (persons)	-0.00231	-0.00230	-0.00211	-0.00250
	(0.00171)	(0.00171)	(0.00172)	(0.00174)
Married	0.0105	0.0104	0.0142	0.000918
	(0.0554)	(0.0554)	(0.0555)	(0.0559)
Years of education	0.00456	0.00457	0.00356	0.00538
	(0.00422)	(0.00421)	(0.00420)	(0.00431)
Constant	0.482***	0.483***	0.500***	0.497***
	(0.0949)	(0.0948)	(0.0917)	(0.0934)
Observations	603	603	604	592
R-squared	0.071	0.071	0.079	0.071

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 31. Estimated Probit coefficients and Marginal effects at means.

Dependent variable: If you had symptoms of TB, at what point would you go to the heath facility in Agency/FR? (1 if chosen "iii. As soon as I realise that my symptoms might be related to TB", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect	Probit	Marginal Effect
Pamphlets with picture	0.200	0.0754						
	(0.133)	(0.0499)						
Pamphlets without picture	0.192	0.0722						
	(0.130)	(0.0489)						
Received any type of pamphlet			0.196*	0.0730*				
			(0.114)	(0.0424)				
Respondent received a pamphlet					0.332***	0.123***		
					(0.113)	(0.0420)		
Number of pamphlets per household							0.522*	0.522*
							(0.285)	(0.285)
Distance to health facility or hospital (km)	-0.0191***	-0.00710***	-0.0191***	-0.00711***	-0.0202***	-0.00749***	-0.0191***	-0.0191***
	(0.00457)	(0.00171)	(0.00457)	(0.00171)	(0.00448)	(0.00167)	(0.00443)	(0.00443)
Have a TB patient in family or locality	0.269**	0.100**	0.269**	0.100**	0.239**	0.0887**	0.297**	0.297**
	(0.115)	(0.0427)	(0.114)	(0.0426)	(0.115)	(0.0425)	(0.115)	(0.115)
How often seeks health care (1=Often)	0.322***	0.120***	0.321***	0.120***	0.360***	0.134***	0.320***	0.320***
	(0.124)	(0.0462)	(0.124)	(0.0461)	(0.125)	(0.0463)	(0.124)	(0.124)
Age (years)	0.00526	0.00196	0.00525	0.00196	0.00451	0.00168	0.00537	0.00537
	(0.00510)	(0.00190)	(0.00510)	(0.00190)	(0.00514)	(0.00191)	(0.00514)	(0.00514)
Household size (persons)	-0.00690	-0.00257	-0.00688	-0.00256	-0.00632	-0.00235	-0.00729	-0.00729
	(0.00498)	(0.00185)	(0.00498)	(0.00185)	(0.00497)	(0.00185)	(0.00499)	(0.00499)
Married	0.0254	0.00945	0.0251	0.00936	0.0391	0.0145	-0.00154	-0.00154
	(0.154)	(0.0572)	(0.154)	(0.0572)	(0.155)	(0.0574)	(0.155)	(0.155)
Years of education	0.0131	0.00487	0.0131	0.00487	0.0106	0.00395	0.0156	0.0156
	(0.0118)	(0.00438)	(0.0118)	(0.00438)	(0.0118)	(0.00439)	(0.0119)	(0.0119)
Constant	-0.0651		-0.0641		-0.0356		-0.0380	-0.0380
	(0.263)		(0.263)		(0.257)		(0.260)	(0.260)

Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Table 32. Estimated Logit coefficients and Odds ratios.

Dependent variable: If you had symptoms of TB, at what point would you go to the heath facility in Agency/FR? (1 if chosen "iii. As soon as I realise that my symptoms might be related to TB", 0 otherwise).

	1	2	3	4	5	6	7	8
VARIABLES	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio	Logit	Odds Ratio
Pamphlets with picture	0.334	1.396						
	(0.220)	(0.307)						
Pamphlets without picture	0.304	1.356						
	(0.213)	(0.288)						
Received any type of pamphlet			0.319*	1.376*				
			(0.186)	(0.256)				
Respondent received a pamphlet					0.538***	1.712***		
					(0.187)	(0.321)		
Number of pamphlets per household							0.852*	2.345*
							(0.489)	(1.147)
Distance to health facility or hospital (km)	-0.0312***	0.969***	-0.0312***	0.969***	-0.0328***	0.968***	-0.0309***	0.970***
	(0.00792)	(0.00767)	(0.00791)	(0.00767)	(0.00769)	(0.00745)	(0.00754)	(0.00731)
Have a TB patient in family or locality	0.432**	1.541**	0.431**	1.539**	0.390**	1.476**	0.476**	1.609**
	(0.190)	(0.293)	(0.189)	(0.292)	(0.190)	(0.280)	(0.191)	(0.307)
How often seeks health care (1=Often)	0.522***	1.685***	0.519**	1.681**	0.580***	1.786***	0.518**	1.679**
	(0.202)	(0.341)	(0.202)	(0.340)	(0.205)	(0.366)	(0.203)	(0.341)
Age (years)	0.00863	1.009	0.00860	1.009	0.00727	1.007	0.00876	1.009
	(0.00847)	(0.00854)	(0.00847)	(0.00854)	(0.00859)	(0.00865)	(0.00853)	(0.00860)
Household size (persons)	-0.0111	0.989	-0.0110	0.989	-0.0101	0.990	-0.0115	0.989
	(0.00801)	(0.00792)	(0.00802)	(0.00793)	(0.00801)	(0.00793)	(0.00803)	(0.00794)
Married	0.0447	1.046	0.0441	1.045	0.0613	1.063	0.00124	1.001
	(0.251)	(0.262)	(0.251)	(0.262)	(0.254)	(0.270)	(0.253)	(0.253)
Years of education	0.0214	1.022	0.0215	1.022	0.0170	1.017	0.0254	1.026
	(0.0195)	(0.0199)	(0.0194)	(0.0199)	(0.0196)	(0.0199)	(0.0197)	(0.0202)
Constant	-0.116	0.891	-0.113	0.893	-0.0561	0.945	-0.0735	0.929
	(0.436)	(0.388)	(0.437)	(0.390)	(0.427)	(0.403)	(0.431)	(0.401)

Observations	603	603	603	603	604	604	592	592

Robust standard errors are in parentheses. *indicates significance at the 10 percent level; ** at the 5 percent significance level; and *** at the 1 percent significance level.

Annex IV Survey Questionnaire

QUESTIONNAIRE FOR IMPACT EVALUATION OF TB CONTROL PROGRAMME in FATA

(*From Respondent including TB Patients and General Public***)**

Note: This information is collected for the purpose of impact evaluation by Directorate of Health Services, FATA Secretariat. It has no any other use.

1. Background information.

1. Name of the Respondent: _____
   i. Relationship with the household head: _____
   ii. Sub-division/Tehsil: _____
   iii. Specific Village and code No.: _____
   iv. Cell number: _____

2. General and demographic data

1) How old are you?_____years
2) What is your gender?
   a. Male b. Female
3) Are you: Married/ Unmarried/ Single
4) How many people live together in your household:

5) How many in your family members are literate:

i. Male_____ ii. Female_____

3. What is your level of education you have completed?

i. No education
ii. Literacy classes
iii. Primary
iv. Religious schooling
v. Hifz
vi. Middle
vii. High School
viii. FA/FSc
ix. Technical/vocational
x. Graduation
xi. Post-Graduation
xii. Darse Nizami
xiii. Master
xiv. Professional Education
xv. Higher educational qualification

4. What is your profession**?**
i. Business ii.Employment. iii. Farming iv. Others_____

5. Which is the nearest health facility or Agency/Tehsil-Head Quarter/Civil Hospital/ hospital from your home?

_____.

6. How far do you live from the health facility or hospital? (Mentioned in question # 05)

_____

7. How often do you generally seek health care at a public or hospital?

i. Within 1-6 months
ii. Twice a year or more
iii. Once per year
iv. Once in past 5 years
v. Other: _____

8. TB knowledge and awareness

1. Have you ever heard about tuberculosis or TB from the following sources of information?

i. Newspapers and magazines
ii. Radio
iii. TV
iv. Billboards
v. Brochures, Posters and other printed materials
vi. Health workers
vii. Family, friends, neighbors and colleagues
viii. Religious leaders
ix. Teachers
x. School
xi. Directorate of Health Services, FATA
xii. Political Administration
xiii. Other Please explain:_____
xiv. None of the above

2. In your opinion, how serious is TB diseases?

i. Very serious
ii. Somewhat serious
iii. Not very serious

3. Which of the following symptoms, if any, relate to TB:

i. cough for two or more than two weeks
ii. blood with cough or in sputum ("belgham")
iii. Weight loss
iv. Shivering due to fever
v. Sweating at night
vi. Pain in chest
vii. Fatigue or Weakness
viii. Sexual coldness
ix. fever
x. None of the above

4. How can a person be infected by TB?

i. Through handshakes
ii. Through the air when a person with TB coughs or sneezes
iii. Through sharing dishes
iv. Through eating from the same plate/utensils
v. Through touching items in public places (doorknobs, handles in transportation, etc.)
vi. Other: _____

5. In your opinion, who can be infected with TB in village/community?

i. Relatives of TB Patients
ii. Neighbors

iii. Afghan Refugees settled in your villages
iv. Drug Users
v. None of the above
vi. Don't know
vii. Specify if any other: _____

6. Do you have any TB patient in your family or locality: Yes/No

7. Do you know if this patient is receiving TB medication: Yes/No

8. Can TB be cured at agency level?

i. Yes
ii. No

9. How can someone with TB be cured?

i. Herbal remedies
ii. Home rest without medicine
iii. Spiritual remedies
iv. Specific drugs given by health center
v. Under DOTS
vi. Do not know

10. How can a person be protected from getting TB?

i. Avoid shaking hands
ii. Covering mouth and nose when coughing or sneezing
iii. Avoid sharing dishes/utensils
iv. Washing hands after touching items in public places
v. Closing windows at home
vi. Through good nutrition
vii. Spiritual Remedies
viii. Other (please explain):_____

11. Does your close health facility provide medicine for treating TB?

i. Yes it provides medicines

ii. it provides medicines on average prices

iii. it provides medicines on expensive prices

iv. Does not provide medicines

v. Do not know

12. Which of the following statements is true according to your information:

a. The government has started a program for TB diagnosis in FATA
b. The government has started a program for TB diagnosis and treatment in FATA
c. The government has no program for TB in FATA

d. Only private clinics are available for treatment of TB in FATA

e. Do not have information about this

2. TB disease is 100% curable but takes time with regular treatment. How long does it take to cure TB completely with regular treatment (which of the following is true):

a. 2 months
b. 6 months
c. 8 months
d. 12 months
e. 2 years
f. duration differs for every patient

TB attitudes and care-seeking behavior

1. In your opinion can you be infected by TB in your village?

i. Yes (Please explain): _____
ii. No (Please explain): _____

2. Do you feel fear that you'll get infected by TB?

i. Yes ii. No

3. What would be your reaction if you were found out that you have TB?

i. Fear
ii. Surprise
iii. Shame
iv. Embarrassment
v. Sadness or hopelessness
vi. Other (please explain): _____

4. Who would you talk to about your illness if you had TB?

i. Medical Doctors
ii. Health Staff
iii. Spouse
iv. Parents
v. Children
vi. Other family members
vii. Close friend
viii. No one
ix. Other: _____

5. What would you do if you thought you had signs/symptoms of TB?

i. Go to nearby health facility in Agency/FR
ii. Go to pharmacy
iii. Got to traditional healer
iv. Pursue other self-treatment options (herbs, etc.)
v. Other: _____

6. If you had symptoms of TB, at what point would you go to the heath facility in Agency/FR?

i. When treatment on my own does not work
ii. When symptoms that look like TB signs last for 3-4 weeks
iii. As soon as I realise that my symptoms might be related to TB

iv. I would not go to the doctor

7. Why you will refuse to go to nearby hospital for treatment?

i. Health facility is far way
ii. Lack of financial resources
iii. Do not trust medical workers
iv. Cannot leave work.
v. Other (please explain): _____

8. In your opinion is the TB drugs provided free of cost or on payment.?

i. Free of Cost

ii. On Payment

Specific Perception about TB / Stigmatised behaviour

1. Do you know people who have/had TB?

i.Yes ii. No

If yes then please Specify your relation to them:-
a) Sibling b) Spouse c) Friend d) Neighbours e) others _____

2. Which statement is closest to your feelings about people with TB disease?

i. ''I feel compassion and desire to help.''
ii. ''I feel compassion but I tend to stay away from such people.''
iii. ''It is their problem and I cannot get TB.''
iv. ''I am scared because they may infect me.''
v. ''I have no particular feeling.''
vi. Other (please explain)

3. In your community, how is a person who has TB usually regarded/treated?

i. Most people reject him or her
ii. Most people are friendly, but they generally try to avoid him or her
iii. The community mostly supports and help him or her
iv. Other (please explain):_____

4. How the community respond to a person after completion of full TB treatment in the village/community?

i. Most people accept him.
ii. The communities still have some doubts
iii. Others _____

5. Share names of your five close friends and their contact numbers:

S.NO	NAME	Cell Number

6. Have you received any informatory leaflet regarding TB Control program?

Yes _____ No_____

If your answer is yes; then share how/through what source did you receive it?

_____

Name of enumerator: _____ Dated: _____

Signature: _____

Name of Interviewer: _____ Dated: _____

Signature: _____