



Journal Homepage: -www.journalijar.com
**INTERNATIONAL JOURNAL OF
 ADVANCED RESEARCH (IJAR)**

Article DOI:10.21474/IJAR01/4629
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/4629>



RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICES ON TB AMONG PRISONERS IN LASHKARGAH CENTRAL JAIL, HELMAND PROVINCE, AFGHANISTAN.

Enayatullah Ghaffari.

Jodhpur School of Public Health(JSPH) Maulana Azad University jodhpur, India.

Manuscript Info

Manuscript History

Received: 27 April 2017
 Final Accepted: 29 May 2017
 Published: June 2017

Abstract

Rational: Afghanistan Ranks among the 22 countries with high TB incidence. TB control is more likely to be achieved if the level of knowledge regarding TB is increased. So far no formal assessments regarding knowledge, attitudes and practices (KAP) of prisoners on TB have been done. Lack of information about TB is one of the major barriers to greater awareness of symptoms, early diagnosis, adherence to treatment, and cure. Therefore having baseline information about KAP of prisoners about TB is essential.

Objective: To explore the KAP about TB in prison of Lashkargah Helmand province, Afghanistan.

Method: A descriptive cross-sectional study was performed through the use of a specifically designed KAP questionnaire in the prison of Lashkargah. 682 out of 746 interviewed (91.4%). Consent letter signed with all and data obtained. Ms. Excel was used for data entry/analysis. Double entry of data completed and 10% of the questionnaire cross checked for more accuracy.

Results: Majority of the population under study (83.5%) were young people (44.3%) were uneducated, 42.6% had low level of education and the rest were in to some extent educated. From all interviewed 44% reported that they are informed about the disease while 56% reported that they do not know about the disease. 62.9% got the knowledge through media while the rest reported that they got the knowledge through medical professional, family and friends. Incorrect concept on TB were also observed.

Conclusions/recommendations: The rate of prisoner who are informed about TB in Lashkargah prison is low (44%) therefore; there is a need to increase the knowledge, attitude and practices of the prisoner through different channel and activities. DOTS systematic follow up/implementation should be promoted. Proper communication on TB prevention to be disseminated to the prisoners. TB patients should be screened for HIV to prevent complications. Quarantine system strengthening.

Copy Right, IJAR, 2017., All rights reserved.

Acknowledgements:-

I, the author of this paper would like to express my sincere gratitude to my professors at Jodhpur School of Public Health (JSPH), Maulana Azad University, DrLatikaNath Sinha, Dr Nitin Joshi, DrPramilaVivek, who taught me how to conduct a research and provided me with valuable comments on my work. Besides I gratefully acknowledge the contribution of DrShukran Ahmad Faqiri my co-guide.

I also would like to thank the team (supervisors, Data collectors and Data entry officers) who participated in this work and finally I would like to thank the all staff of in charges in prison and the prisoners themselves who contributed and participated in this survey.

I hope this research will contribute to the enhancement of quality of health service delivery in Afghanistan.

Background and Rationale:-

Afghanistan Ranks among the 22 countries with high TB incidence in the world and around 13000 Afghanis die each year from this disease. (AzizullahHamim et al, 2016). National Tuberculosis Control Program (NTP) was established in 1954 by Ministry of Public Health(MoPH), with technical and financial supports of World Health Organization (WHO). The twenty three years of civil war, which started in 1979, had resulted into gradual collapse and destruction in the public health system, including TB control program. In 1997 NTP, in collaboration with (WHO) and other TB partners, adopted the Directly Observed Treatment Short course (DOTS) strategy. But actual implementation of DOTS initiated only after formation of new Afghan government (Transitional Government of Afghanistan) in 2002. DOTS program was practically supported from the point of view of technical, financial, human resources and drug when the TB control program services have been integrated into Basic Package of Health Services (BPHS) and Essential Package of Hospital Services (EPHS) in this country. TB care services are delivered free of charge in all geographical areas where MOPH is implementing the BPHS and EPHS primary health care services. The role of each health facility on TB control program services is better defined in the above mentioned policy packages of MOPH.

In early 2003, the first National Strategic Plan for TB Control (2002-2005) was drafted aiming to reduce the impact of TB as a public health problem in the country. The NTP determined the national goals of TB control to achieve the target of 70% case detection of new sputum smear positive cases and 85% treatment success rate in accordance to the DOTS national strategy. Then, NTP by help of WHO developed national strategic plan for 2006 – 2010 and in 2008 NTP strategy adopted to the MDGs and Global Stop TB Partnership Strategy as National Strategic Plan for TB 2009-2013.

At National level NTP is providing leadership and management support for the TB control in Afghanistan and is responsible for technical oversight, monitoring, quality assurance and coordination of TB control initiatives within MOPH, with the national and international partners in Afghanistan.

WHO estimates that approximately 61,000 all types of TB cases occur every year with incidence of 189/ 100,000 pop/per year. As per WHO Global tuberculosis report and NTP annual report (2011) The prevalence of TB is around 351/ 100,000 population per year and mortality is 13,000 (39/100,000) For the incidence of Multi-Drug Resistant (MDR) TB, the sub national drug resistance survey has been conducted in six provinces of Afghanistan during 2010 and this survey revealed incidence of MDR-TB as 6.3% among both new and re-treated cases. In this survey, there were totally 17 cases of MDR-TB and 64 cases were notified as MDR-TB by the end of 2012.

Due to improvement in TB control program in the country, the number of notified TB cases has significantly increased during the period of 2001-2016 from 9,668 to 43,046 TB cases. Total of 416,336 TB patients have been notified in Afghanistan starting from 2001 to 2016 (Global TB report and NTP annual report 2016).

New Smear positive pulmonary TB cases constituted 49% of pulmonary TB cases. Extra-pulmonary TB cases constituted 22%, new smear negative constituted 15%, other previously treated 2% of all cases. Continuously, there have been variations in TB distribution by age and gender. There exists high incidence among people aged 15 to 44, with the highest incidence among the most productive age group of 25-34 years old. While Children under 15 make 40% of total population, notified TB cases less than 15 years consists of about 10 % of all TB cases in 2011.

More female cases (particularly, aged 15 to 45 years old) compared to males are seen for any form of TB infection (female to male ratio ranges from 1.5:1 to 2.1:1). As the national average, rate of TB suspect among total OPD aged 15 years and over was 3% in 2011 and 90% of suspects examined for diagnosis by sputum smear microscopy. Finally, 8% of suspects were diagnosed as TB.

However, these figures only represent data from TB diagnostic centers which have laboratories within same facilities and do not include data from TB treatment centers which do not have laboratories. Thus, data regarding referred cases from TB treatment centers to TB diagnostic centers are unknown. As of December 2016 totally 16,221 all type of TB cases tested for HIV and as a result 8 TB/HIV Co-infected cases have been notified.

Confined populations, especially those comprised of incarcerated individuals, represent a serious problem in the control of infectious and contagious diseases, such as tuberculosis (TB), AIDS and scabies. Even when surrounded by prison walls, these individuals are never entirely isolated from society. Bonds with the outside world continue through contact with both visitors and prison workers. Inmates also inter-relate with the community in general through releases to work, escapes and return to society. In addition, prison workers maintain contact with their own families and the community in general, and this represents a double risk of contamination. In other words, an uncontrolled epidemic of TB in a prison facility may represent a serious risk to individuals and to society at large. In the opposite direction, TB brought in from the outside community can trigger off an epidemic among inmates.

Moreover, rules related to prison environments influence the relationship of TB patients with this disease. In this regard, TB can affect the social interaction between individuals with TB and other inmates, thus reducing awareness of the seriousness of its symptoms.

Besides among both the general population and incarcerated groups, TB is a topic that is not easily discussed nowadays. It is associated with poverty, isolation, social exclusion, irregular and immoral behavior, as well as with social depravation. These values are strongly present in the stigmatization of TB patients.

So taken in consideration all these points mentioned above and considering the fact that so far no formal assessments regarding knowledge, attitudes and practices of prisoners about TB have been done and lack of information about this disease is said to be one of the major barriers to greater awareness of symptoms, early diagnosis, adhesion to treatment, and cure. Therefore this study is designed to have baseline information about Knowledge, Attitude and Practice of prisoners about TB in Lashkargah prison of Helmand province.

Literature Review:-

Congested housing, too many (746) prisoners in one compound, poor ventilation, poor sanitation, smoking, in adequate nutrition protocols, less exposure to sunshine, high degree of susceptibility for the infectious diseases among prisoners, family history of exposure to the TB bacteria, incomplete treatment of TB cases, extreme degree of poor quality of TB medicines, very low level of education among the prisoners, inferior understanding on health promotion and poor practice of prevention from disease, limited or no access to the means and ways of infection preventions, no soap, no running water, contaminated beds, fellows, blankets, quilts, sharing sleeping materials, sharing utensils for food and drinking water, poor and no control of droplet sources of infection, repeated infection with common cold and spread of germ through coughing, unhealthy local believes when talking about infection and infection control, domination of harmful ideas over good ideas, resistance for changes, blind level of thinking and blind minded people for controlling the environment, terrorism and fear of external influences for decision making, fear of families hazard due to security concerns in the environment and pseudo respect of those prisoners who are strongly associated with influencing group in the province, extended period of being in jail and no one knowing about the exact date of his/her release from jail are all contributing factors for TB cases and increases in the number of TB positive cases in Helmand provincial jail (Lashkargah).

Access to the prisoner's residence areas in prison was very much limited for one year (mid 2014-mid 2015) due to high level of conflict between prisoners and prison managers. Prisoners were on their own and there was less control of diseases prevention and management. Quarantine system was not in place and the TB patients were living in kind of mixed conditions in the prison. None of the prisoners had health files and the health issues management was only for the records with less follow up of the health medical cases. Despite having a good building as prison build in 2014 the building and environment maintenance by the managers and prisoners are following a very traditional ways

of environment management. Poor hygiene, poor sanitation, poor food management. Electricity supply to the prison was irregular and they had almost 1-2 hours' electricity services in 24 hours.

According to MOPH Health Information System in 2017, seven smears positive pulmonary Tuberculosis diagnosed among the 746 prisoners in Lashgargah prison and this rate represent five-times increase in the TB incidence in the prison compare to the national incidence of TB in the country.

A study conducted by Zahra Nailah (2011) in Jamaica, Caribbean island shows that less than 40% of respondents had good knowledge of TB among the study population. Significant associations with good knowledge were only found with highest educational level obtained and the number of years employed to a public health facility.

Another study conducted by Daniel Tolossa on May 2013 in Ethiopia, Shinile town Somali regional state that 94.9% respondents said they ever heard about TB, only 22.9% know that TB is caused by bacteria, 80% have awareness that TB can be transmitted from a patient to another person, and 79.3% know that transmission of TB can be preventable. Persistence cough (72.4%) was the most commonly stated symptom of TB, and modern drug used in health institutions (68.1%) was the prefer choice of treatment. 291 respondent (71.0%) said that they would seek treatment at health facility if they realized that they have symptoms related to TB. 227 respondents (55.4%) considered TB as very serious disease and 284(69.3%) would experience fear if they themselves be TB. Individuals with educational level of grade 8 to12 had increased odds of having good level of overall TB knowledge compared to illiterate individuals (or=2.3; 95%cl; 1.2 to 4.6).

A study conducted by TuberkTorak (2013) on Pulmonary tuberculosis incidence in Turkish prisons where 4615 prisoners (93% Male, 7% Female) screened and 398/4615 (8.6%) was founded TB patients. Tuberculosis prevalence in the prisons was found to be 108/100.000 which was four times higher than the overall incidence of tuberculosis in Turkey. Five out of 130 were male. (PMID: 23581261 [PubMed - indexed for MEDLINE]).

JangoBati (2013) in his study on community's knowledge, attitudes and practices about TB in Itang special District, Gmbilla, south western Ethiopia found that out of 422 study participants (58.5% male and 41.5% females) only 3.3% mentioned bacteria- Germ as a cause of pulmonary TB and 9.9% mentioned cough for at least two weeks as the sign of TB. Taking the mean knowledge score as the cut-off value, 57.6% (95% CI:52.7% to 62.3%) of the study participants at good level of knowledge about TB, 40.8% (95% CI:66.0% to 45.6%) at favorable attitude towards TB and 45.9% (95% CI: 41.1% to 50.9%) had good practices.

Finally from all the mentioned literature and considering the fact that in Afghanistan, no formal literature was found to show the knowledge, attitude and practice about TB. Therefore the result of this study can serve baseline information to the literature.

Objectives:-

The objective of this study was to explore the knowledge, attitudes and practices about TB in Lashkargah central jail Helmand province, Afghanistan and stating key recommendations to stakeholders.

Study Design:-

This was a cross-sectional study which was conducted in Lashkargah Jail in Helmand province of Afghanistan in order to explore the knowledge, attitudes and practices about TB.

Target Respondents/participant:-

The research population or the sampling frame was all the prisoners in Lashkargah jail included 746 inmates.

Sample size:-

Purposive sampling or non-probability sampling method is used in this study and the total number of prisoners in Lashkargah Jail which were 746 prisoners were considered to be interviewed but from the total, we could only interviewed 682 which represents (91.4%) of the total population.

Inclusions Criteria:-

All prisoners in Lashkargah Jail, Helmand Province.

Exclusion Criteria:-

The prisoners who cannot bemet the interviewers during the period of the study due to any reason.

Duration of the study:-

This study took a period of 40 weeks.

Research Methodology:-

A cross section study is conducted to determine the knowledge, attitude and practices of prisoners in Laskargah Jail at Helmand province of Afghanistan. The study targeted all prisoners (746 persons) of the mentioned jail but out of the total the interviewers were allowed to meet with 682 prisoners (91.4%). Consent letter signed with all and data obtained. The Ms. Excel was used for data entry and data analysis. Double entry of data completed and 10% of the questionnaires were cross checked for more validation and accuracy. To present a better picture objective of study we planned to collect data from all prisoners, but due to security and other reasons we had access to 682 prisoners who were interviewed. 682 participants were all male, although among the total 26 female prisoners were also there who could not be interviewed because of cultural sensitivities the surveyors were advised not to interview them.

Study Tool:-

The KAP Questionnaire designed by WHO was adapted to Lashkargah situation and was applied in the study. All questions were covering four sections dealing with the socio-demographic situation of respondents and the following aspects related to TB: history of the patient's disease, knowledge, behavior toward the possibility of contracting TB, and attitudes toward patients with TB. (*Refer to Annex I Questionnaire*).

Pilot Testing:-

Data collection instrument/tool, the KAP questionnaire, is developed in English. The tool is then translated in to local languages (Pashtu) and back it is retranslated to English to ensure the quality of translation. A pre-test of the study tools is considered in order to check the tools (questionnaires) and to identify and solve the unforeseen problems before the actual data collection. The pre-test emphasized to improve the translation, check accuracy and adequacy of the questionnaire, and to know the time of the interview for each questionnaire. In addition, Interviewers pre-test at the training room is also ensured. Furthermore the adapted questionnaire was also pre-tested in the Penitentiary, located in the same complex.

Training:-

Three days training is conducted for field researchers (2 medical doctors, 2 nurses, 1 community health worker and 1 pharmacist) who were the staff of the Health facility in Lashkargah Jail. The training emphasized on the data collection tools, survey method, and piloting. The training is conducted in one batch. Necessary training materials are provided to the participants during the training. Different methodologies are used in order to make sure the participants understand the objective of the training such as presentation, flip charts, role play and mapping. The training is provided in one local language (Pashtu). In order to ensure the knowledge of participants on the survey tools a reliability testing training is also taken from all participants.

Data collection:-

6 Field researchers collected data from 682 prisoners out of 746. To minimize the potential for social desirability bias, the interviewers explained the purpose, confidentiality and anonymity of the study to each provider before seeking consent, after a consent form is signed by each participant (*Annex II-Consent Form*). Data collection took a period of 6 weeks simultaneously by all interviewers and finally after data collection is completed, an excel data base is prepared where all the data from the questionnaires are entered into and then accordingly analyzed.

Monitoring and supervision:-

The process of data collection are monitored and supervised by one supervisor; the provincial TB coordinator from Provincial health Directorate. Beside double entry of data completed and 10% of the questionnaire were cross checked for more validation and accuracy.

Date Analysis:-

For analyzing purpose all data from the questionnaires are entered into excel base software. Data edited and cleaned by principle investigator. I used double data entry mechanism for each filled questionnaire to minimize keypunch errors and ensured the quality of data entered into excel made software. Then the data analyzed.

Ethical Consideration:-

This study cannot be the representative of all Afghanistan therefore it did not require MOPH Institutional Review Board (IRB). However, for ethical purpose all data are stored in a safe place and only authorized staff has access to the data bank. The individual information of respondent is kept confidential and not disclosed during the analysis or dissemination phases. Informed consent note in written (*Annex II-Consent Form*) were taken from each respondent during the interview and data collection. The respondents are informed about their rights during the study.

Limitations of the study:-

The limitations of the study are the followings:

- ❖ Prison is a public prohibited area, frequent attempt to get to prison is not welcome by the government authority and prison control team. Therefore we had to adjust our time table to the window of opportunity provided by the prison authorities.
- ❖ Due to cultural sensitivity we were not allowed to interview the female prisoners.

Results and Key finding:-

The results of this survey are presented into three main areas as followings:

1. Socio-demographic characteristics of respondents
2. knowledge and awareness of respondents
3. Behaviors and attitude of respondents

Socio-demographic characteristics:-

A total of 746 inmates were planned to be interviewed in Lashkargah Jail of Helmand Province, we were able to obtain 91.4% response rate from all the inmates. **Table1.** Below describe the Socio-demographic characteristics of respondents as following which were different in terms of age, gender and level of education.

- ❖ 56.16% of the inmates were under the age 30 and 27.27% were between(31-40) which means that 83.5 % were young people.
- ❖ 12.17% between (41-50) and the rest 4.4% were over 50 years old.
- ❖ 100% of the participants were male.
- ❖ 44.28% of the prisoners were uneducated, 12.6% of them completed high school education and rest 42.6% are people with low level of education.

Table. 1 Socio-demographic characteristics
Number of respondents: 682

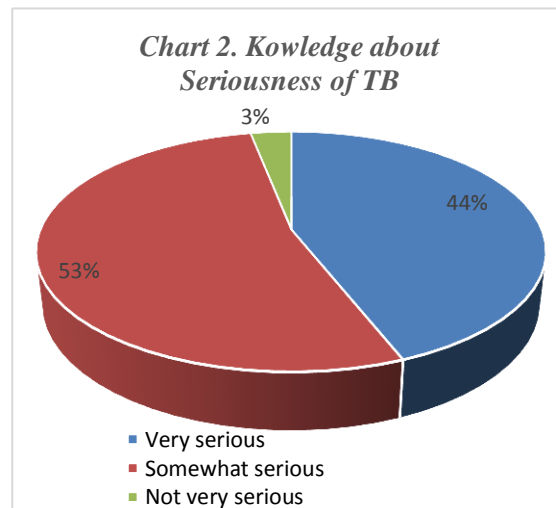
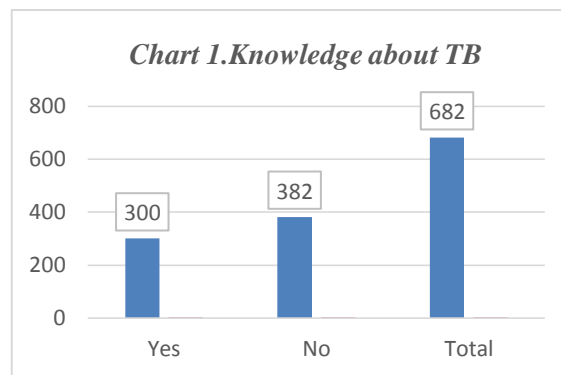
Categories of Information	N	%
Age (in years)		
Under 30	383	56.16
31 – 40	186	27.27
41 - 50	83	12.17
Over 50	30	4.40
Gender		
Male	682	100.00
Female	0	0.00
Level of Education		
No school	302	44.28
Elementary	123	18.04
High school	86	12.61
College	3	0.44
Higher education (professional)		0.00
Religious schooling only	112	16.42
Literacy classes only	56	8.21

Knowledge and awareness of respondents:-

From the total population interviewed 44% reported that they are informed about the disease while 56% reported that they do not know about the disease, meanwhile 44% stated that the disease is very serious, 53% stated that it is somewhat serious and the rest 3 % reported that it is not serious at all. Furthermore from the total population who reported that they are informed about the disease; 71% has mentioned that they got the knowledge through media and IEC/BCC material such as Radio, TV, billboards, brochures, posters and other printed materials. 27% reported that the got the information form the health workers and 2% stated that they got the information through other channels such as family, friends and Religious leaders. **Table.2** below described this.

Table 2. TB knowledge and awareness channel

Description	%	Number
Media	71%	213
Health Worker	27%	80
Others	2%	7
Total	100%	300

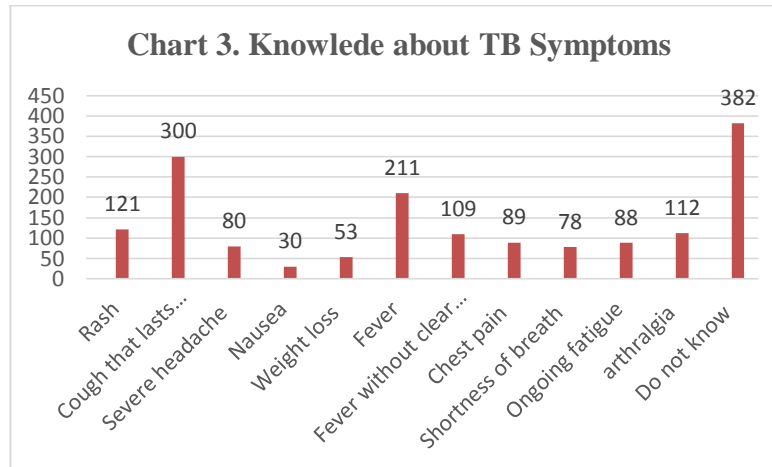


Furthermore **Table 3** below described the information about the health seeking behavior of the population under the study:

Table 3:- Health Seeking behavior

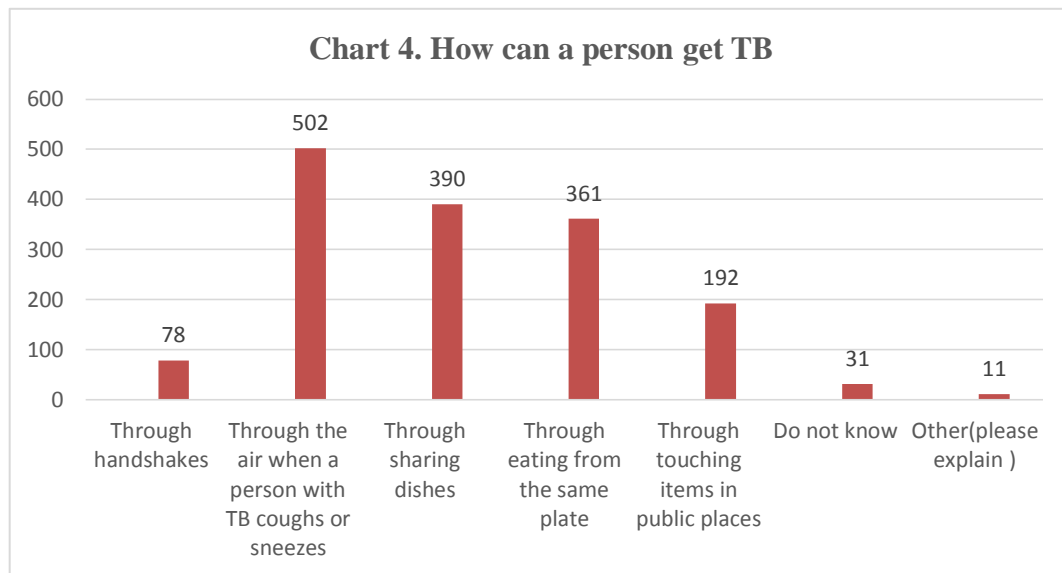
Health- seeking behavior	N	%
Private Clinic	211	31%
Government clinic or Hospital	196	29%
Traditional or homeopathic healer	31	5%
Clinic run by NGO (Non-Governmental Organization)	202	30%
Other	42	6%
Total	682	100%

About the symptoms of TB; Chart.3 below described the number of study population who reported the symptoms as following:



This result suggests that some people have misconception about the symptoms of this disease which are described above, so their knowledge is permeated with unfounded beliefs and incorrect information. Moreover about the knowledge on; how can a person get TB? Chart 4 below show the number of study population with their belief.

About the question that how can a person prevent getting TB; Table 4. Describe the number and percentage of study population for different options:



About the question that who can be infected with TB? 41% reported anybody, 24% reported only poor people, 34% reported homeless people, 13% stated only alcoholics, 17% has mentioned; drug users, 6% stated that people living with

HIV/AIDs, 10% mentioned people who are in prison and 46% has reported that they do not have any idea (Refer to Table 5. Below).

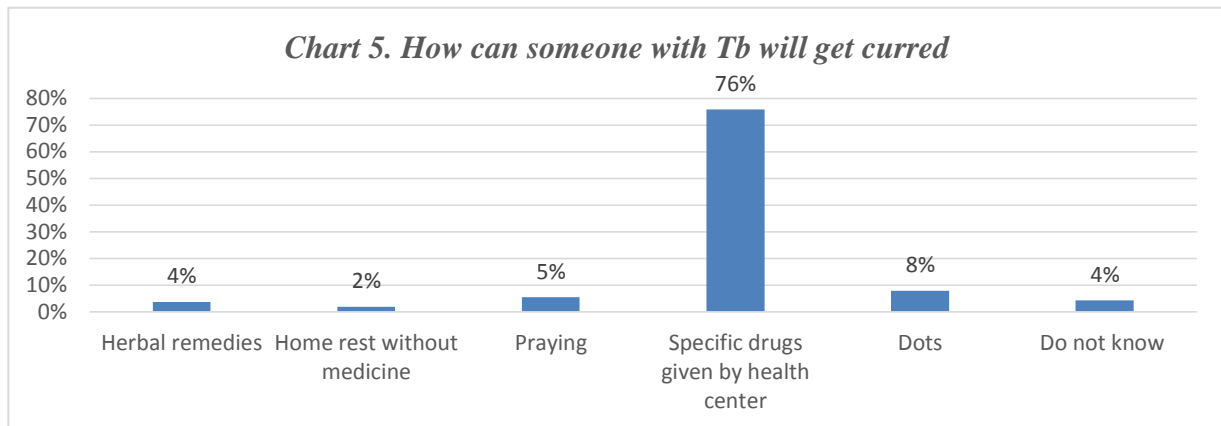
Table 4. Can a person prevent getting TB?

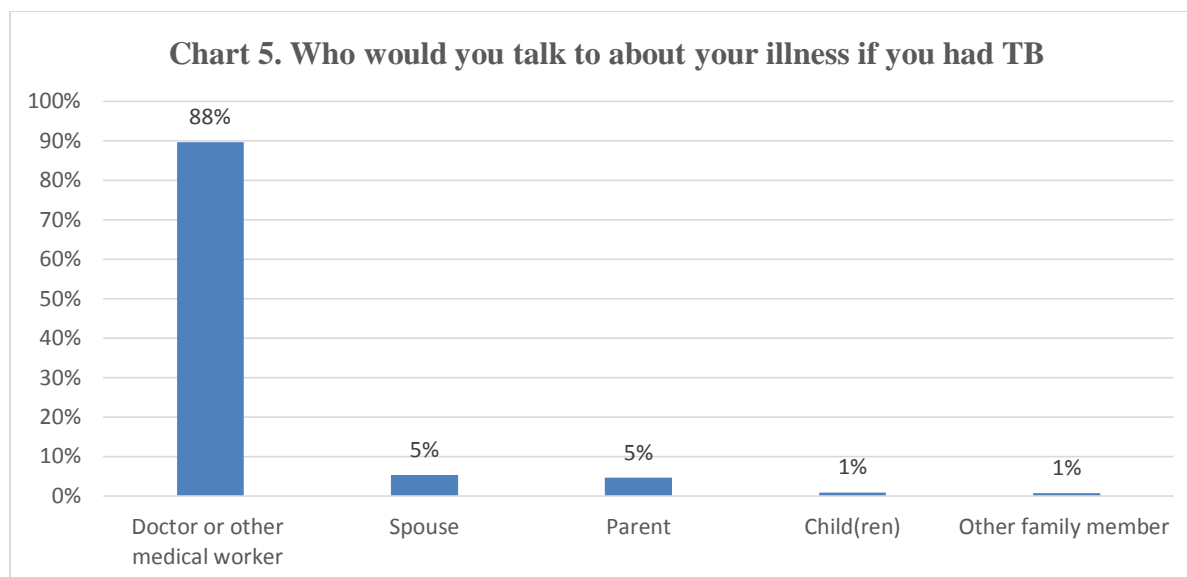
Description	No	%
Avoid shaking hands	68	10%
Covering mouth and nose when coughing or s	289	42%
Avoid sharing dishes	300	44%
Washing hands after touching items in public	233	34%
Closing windows at home	72	11%
Through good nutrition	121	18%
By praying	37	5%
Do not know	382	56%

Table 5. Can a person prevent getting TB?

Description	No	%
Any body	281	41%
Only poor people	167	24%
Only homeless people	233	34%
Only alcoholics	91	13%
Only drug users	116	17%
Only people living with HIV/AIDS	41	6%
Only people who have been in prison	71	10%
No Idea	311	46%

The result on how could someone with TB cured? And to whom he should talk about his illness? Chart5. And 6 below show the result:





Behaviours and attitude of respondents:-

The results about the behaviors and attitude of respondents if they got TB indicates that majority (88%) of them would talk about their disease with the doctors, 5% with their spouse and the rest with their parents, children and close friends. Furthermore 83% of the respondent reported that they would go to health facility if they thought they have the symptoms of the disease and 17% have reported that they would go to traditional healer. Beside about the cost of TB diagnosis; 60% of the respondents mentioned that the cost is free, 15% reasonably priced, 14% moderately expensive, and finally 11% has mentioned that the cost is very expensive. Furthermore the results indicates that when there is TB patient in a community 90% of the community member will avoid contacting that person and the rest 10% has mentioned that community will support the patient. More over 78% of the respondent has mentioned that HIV patient must be concerned about TB and the same percentage has mentioned because they are more likely to develop TB and last but not least 77% of the respondent has mentioned that they would like to receive more information about TB, its symptoms, treatment and other issues.

Discussion:-

Very few studies have been published on knowledge about TB among inmates, and even these indicate the lack of information about this disease as one of the major barriers to greater awareness of symptoms, early diagnosis, adherence to treatment, and cure. In Afghanistan such study is not conducted at all, Any how the result from the KAP (Knowledge, Attitudes and Practices) survey that has been performed in Lashkargah Jail in Helmand province indicates that 44% are informed about the disease while 56% reported that they do not know about the disease, therefore the results from this study would serve as a baseline information therefore cannot be consistent with the other study worldwide since there would be much difference in context, culture and other factors affecting the result of the study. Meanwhile it can be stated that Prisoners in jail of Helmand have does not have a good level of knowledge and understanding about the TB diseases spread, seriousness, prevention and treatment. The level of education of public on TB is high and there is need for more systematic followed up of case detection and case management particular DOTS program. Respondent information about DOTS is limited and this can be because of their low level of education and poor understanding of the system for TB management. This is an issue for Health Workers and managers to improve on their program management and mechanism of communication with public.

Level of awareness on the TB seriousness in HIV patients are good at the community level and this helps the manager and series providers to better link the TB case management of HIV patients with the community support.

A high percentage of respondent desire for more information on TB which is a good signed of receptivity of community to support TB control program and to be included in the system for enhancing the TB control process in Afghanistan.

Seeking support for the treatment of TB cases from the health workers and health facility can be defined as opportunity that we can build and better support of public health service providers by the community.

Public are compassionate about TB patients and are willing to support and this fact help the managers and planners to focus on community support and awareness in TB control.

Looks like that TV & radio is a good means of communication with public and brochure and poster are less common to be used for public awareness. This situation is indicating that either public health managers did not use the printed materials for TB awareness or there is certain level of local cultures affected that public health awareness on TB only remind focus with TV & radio broadcasting.

Conclusion/Recommendation:-

Considering the study the rate of prisoners who are informed about TB in Lashkargah prison is low (44%) therefore; there is a need to increase the knowledge, attitude and practices of the prisoners through different channel and activities. DOTS systematic follow up/implementation should be promoted. Proper and accurate communication on TB prevention to be disseminated to the prisoners and this could be more preferably through TV and Radio. TB patients should be screened for HIV to prevent complications. Quarantine system strengthening. Therefore considering the sensitivity of Jail proper interventions should be planned and carried out to increase levels of knowledge, attitude and practices of prisoner about TB and accordingly ensure stopping TB.

References:-

1. Azizullah Hamim. et al. (2016) Epidemiology of extra pulmonary TB in Afghanistan. MSH, Challenge TB.
2. Zahra Nailah White (2011) the knowledge, attitudes and practices on tuberculosis (TB) among health care workers in Kingston & St. Andrew, Jamaica
3. Daniel Tolossa (2013) the knowledge, attitudes and practices. Ethiopia, Shinile town, Somali regional state.
4. TuberkTorak (2013) pulmonary tuberculosis incidence. Prisons, in Turkish
5. JangoBati (2013) in his study on community's knowledge, attitudes and practices about TB in Itang special District, Gambilla, south western Ethiopia
6. National TB Work plan 2013-2017, Afghanistan, Ministry of Public Health.(MOPH)
7. WHO and Harvard guide/method for conducting research
8. National TB strategy (2016) NTP. MOPH, Afghanistan
9. National TB strategy (2011) NTP. MOPH, Afghanistan
10. Provincial Health Management Information reports of the year 2016, MOPH Afghanistan
11. Afghanistan Demographic Health Survey(DHS) - 2015
12. Prevalence of Pulmonary Tuberculosis among Prison Inmates at Mbarara Central Prison, South Western Uganda. Nov 2014 PubMed DOI: 10.9734/AIR/2014/10676- PMID: 26949722 [PubMed]
13. Dara M, Grzemska M, Kimerling ME, Reyes H, Zagorskiy A. Guidelines for control of tuberculosis in prisons. Tuberculosis Coalition for Technical Assistance and International Committee of the Red Cross. 2009.
14. Savicevic AJ, Popovic-Grle S, Milovac S, Ivcevic I, Vukasovic M, Viali V et al. Tuberculosis knowledge among patients in out-patient settings in Split, Croatia. Int J Tuberc Lung Dis 2008; 12(7): 780-5
15. Bick JA. Infection control in jail and prisons. Clin Infect Dis 2007; 45(8): 1047-5511
16. Waisbord S. Participatory communication for tuberculosis control in prisons in Bolivia, Ecuador, and Paraguay. Rev Panam Salud Publica 2010; 27(3): 168-7425.
17. Rao N, Arain I. Knowledge regarding tuberculosis among TN course participants in Karachi. Int J Tuberc Lung Dis 2010; 14(11): S160.
18. World Health Organization. Advocacy, communication and social mobilization for TB Control. A guide to developing knowledge, attitude and practice surveys. WHO/HTM/STB/2008.46.
19. Sergio Ferreira Junior, Helenice Bosco de Oliveira, Leticia Marin- Leon, Knowledge Attitude Practice on TB in prison and public Health services – Brazil 2013
20. Conducting KAP Surveys – A leading Document Based on KAP Failures ACF International 2013

Annexes:-

Annex I. KAP Questionnaire

Annex II-Consent Form