Original Article

KNOWLEDGE, ATTITUDE AND PRACTICE OF DOTS PROVIDERS UNDER RNTCP IN UJJAIN, MADHYA PRADESH

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ABSTRACT

Background: India has the highest burden of TB worldwide. Every year approx 1.8 million people developed tuberculosis and 0.37 million die.

Aim: To study knowledge, attitude and practice of DOTS Providers under RNTCP in Ujjain, Madhya Pradesh.

Material and Method: All DOTS providers of Ujjain city were interviewed by using a questionnaire, which included questions regarding their knowledge about TB, their attitude and actually how they provide the DOTS.

Result: 56.9% of DOTS provider has good knowledge of TB. It was significantly higher in men (72.4%; P=0.04), respondent aged< 30 (79.5%) (P< 0.05) and DOTS provider who are in health services (P=0.016). 100% identified cough for more than two weeks as the symptom of TB. Correct knowledge of case definition of default, relapse and failure was shown by 45.5%, 34.3%, 20.6 % respectively. 80.4 % provide DOTS during home visit.

Conclusion: Knowledge of DOTS providers is not satisfactory about Tuberculosis. Knowledge is good in those who have higher qualification and are in health related services. Attitude and Practice of only 36.3 % of DOTS provider is very good.

Keywords: KAP, DOTS Providers, RNTCP

INTRODUCTION

WHO declared Tuberculosis a global emergency in 1993[1]. WHO estimated that globally 9.4 million new cases were reported and 1.3 million people died due to TB in 2009. Majority of the cases belonged to Asia and Sub-Saharan Africa[2].

Situation is grimmer in India with highest burden of disease and rank 1st world wide[3]. Every year approximately 1.8 million people developed tuberculosis and 0.37 million die approximately 1000 person per day[4]. WHO estimate incidence of sputum smear positive cases in India was 75/100000 and for all type of cases it was 170/100000 per year in 2008[4]. It is estimated that by 2020 there will be over 1 billion new TB infection and 200 million people will succumb to clinical disease and about 35 million will die if control measures is not further strengthened[5].

India had adopted WHO recommended directly observed treatment short course (DOTS) strategy under Revised National Tuberculosis Control Programme (RNTCP) for better control of TB in 1992.By 2006 entire country was covered under this national programme[6].

Community participation is crucial for implementation of DOTS and for success of TB control programme. Therefore it has been clear that problem in case detection and case holding are not solved by clinical approach alone but there is need for community participation.[7,8]. Different studies[9,10] shows, improved communication between DOTS providers, TB patients and community contribute for better case detection, case holding and therapeutic outcome. Decentralization of DOTS services and their supervision of providers is key element of RNTCP. That's why successful implementation of programme depends on how efficiently DOTS providers understand the programme and their knowledge, attitude and practice regarding disease and treatment.

In India, TB drugs are given free of cost, thereby having adequate knowledge and positive perception of providers toward TB might encourage patients and community members to seek medical care timely, regularly and for adequate length of time. No previous study has been performed in Ujjain to evaluate the knowledge, attitude and practice of DOTS providers after implementation of RNTCP in MP. So we conducted this study to study knowledge, attitude and practice of DOTS providers under RNTCP in Ujjain (MP).

MATERIALS AND METHODS

Study Area: The study was conducted in Ujjain (MP). Ujjain district cover 2.74% of population of MP(Census 2011). In Ujjain district there are three tuberculosis units, 20 designated microscopic centres out of which six are in Ujjain city proper. There are 110 DOTS providers working in Ujjain city as per the list provided by District Tuberculosis Centre (DTC) Ujjain at the time of study.

Study Design and study period: The Cross-sectional study was conducted from February 2011 to May 2011 covering all DOTS providers of the Ujjain city.

Data Collection: Ethical clearance has been obtained from institutional Ethic Committee of R. D. Gardi Medical College, Ujjain (MP). All DOTS provider of Ujjain city were included in study and interviewed by using questionnaire which were filled by face to face interview after taking written informed consent from participants.

These questionnaires are designed using RNTCP guideline for DOTS providers. The questionnaire consisted of question assessing their knowledge, attitude and practice regarding tuberculosis and questions on socio-demographic characteristic of DOTS providers.

Each correct answer was given one mark and incorrect answer was given zero mark and total score was obtained and analysed.

Statistical analysis: To test association between knowledge, attitude, practice, different socio-demographic, clinical and other variable chi-squre test was used. The analysis was done using SPSS 17 version.

RESULTS

Out of 110 DOTS providers 102 (92.7 %) were interviewed rest of 8 either did not respond or were not traceable by research team.

Socio demographic characteristics

Knowledge of TB was significant higher (79.5%) in younger respondent (age< 30) in comparison to older respondent (age >30) (P< 0.05).Women recorded lower rate (50,6%) of good knowledge compared to men (72.4%) which was statistically significant (P=0.04). There was significant association between good knowledge and higher qualification (P<0.05). DOTS providers who were in health related services reported significant higher knowledge (P=0.029). Knowledge was increased with duration of job but only up to five years (72.1%) thereafter it declined (36.2%).(Table1)

Knowledge

Table 2 shows DOTS provider knowledge about TB. Only 80.4% DOTS providers knew that TB is caused by bacteria rest were answered either virus, animal or do not know. Cough or breath was considered route of TB transmission by 98.1% providers. All DOTS providers (100%) answered that TB affect lungs while TB can affect Uterus (56.9%), Bones (54.9%), Intestine (46.1%), Kidney (41.2%), other organs (26.5%) according to providers. Regarding risk factors of TB, 98% of providers consider household contact or close contact is the main risk factor for TB infection where overcrowding, under nutrition, humidity was mentioned by 42.2%, 30.4%, 15.6% providers, respectively. Presence of cough of more than two weeks was identify by 100% DOTS providers as sign of TB while 87.3%,

85.3% 72.5%, 70.6%, 66.7% DOTS providers mention haemoptysis, weight loss, loss of appetite, fever, chest pain respectively. Majority (88.2%) DOTS providers consider X-ray as a diagnostic tool for TB in comparison to sputum microscopy (86.2%). As for duration of anti TB treatment 6 – 8 months, 82.4% answered correctly.

Table 1: Socio demographic characteristics of DOTS providers (n = 102) and their association with good knowledge score.

Socio-demographic variables	Total Sample (n = 102) No. (%)	Good Knowledge No. (%)	Significance
Age (years)			
≤ 30	39 (38.2)	31(79.5)	X^2 = 13.2, df = 1
> 30	63 (61.8)	27 (42.9)	P < 0.05
Sex			
Male	29(28.4)	21(72.4)	X^2 = 3.99, df = 1
Female	73(71.6)	37(50.6)	P = 0.04
Education			
< 10th	17(16.7)	5(29.4)	X^2 = 16.6, df = 2
10 – 12	39(38.2)	17(43.6)	P < 0.05
>12th	46(45.1)	36(78.3)	
Occupation			
Health related	78(76.5)	49(62.8)	X^2 = 4.8, df = 1
Others	24(23.5)	09(37.2)	P = 0.029
Duration of Job (years)			
< 1	37 (36.3)	19(51.4)	X^2 = 8.29 df = 2
1 – 5	43(42.1)	31(72.1)	P = 0.016
>5	22(21.6)	08(36.2)	

X^2 - Chi square test, df – Degree of freedom, P – p value (Significant if < 0.05)

Table 2: Knowledge of DOTS providers about Tuberculosis

Knowledge Variable	Subjects (n=102)(%)
Cause of TB	
Bacteria	82 (80.4)
Others	20 (19.6)
Risk factors of TB	
Household contact	100 (98.1)
Overcrowding	43 (42.2)
Under-nutrition	31 (30.4)
Humidity	16 (15.6)
Sign suspicious of TB	
Cough > 2 week	102 (100)
Haemoptysis	89 (87.3)
Weight loss	87 (85.3)
Loss of appetite	74 (72.5)
Fever	72 (70.6)
Chest pain	68 (66.7)
Definition	
Active pulmonary TB	58 (56.9)
Treatment after default	46 (45.1)
Relapse	35 (34.3)
Failure	21 (20.6)
No. of person infected by one case of Infectious pulmonary TB in one year	
Know	17 (16.7)
Don't know	85 (83.4)

Active pulmonary TB was defined by 56.9% of providers as sputum smear positive pulmonary TB. According to RNTCP guidelines, correct knowledge about the case definition of default, relapse and failure was shown by 45.5%, 34.3%, 20.6% of providers respectively. Only 16.7% providers know that one sputum positive untreated active pulmonary TB case can infect 10 – 15 people in a year. According to 86.3% DOTS providers, TB is a social problem in India.(Table 2)

Score was categorized in four category, excellent, good (combined and consider as good Knowledge) average and poor (combined and consider as poor knowledge). In DOTs providers, knowledge of TB was excellent in 15.7 % and 8.8 % had below average knowledge.(Table 3)

Table 3 : Knowledge score of DOTS providers about Tuberculosis

Knowledge score	Total sample (n = 102) (%)	Result
>30	16 (15.7)	Excellent
24 – 30	42 (41.2)	Good
14 – 24	35 (34.3)	Average
< 14	09 (8.8)	Poor

Attitude and practices

Table 4 shows attitude and practice of DOTS providers about TB. In suspected case of pulmonary tuberculosis, 82.4 % of DOTS providers asked for two sputum examination and 57.8 % of DOTS providers referred them to specialist at TB hospital. Regarding the patient's contacts, 77.5 % providers was in favour to investigate them for TB. At the end of intensive phase, 70.5 % providers would like to repeat sputum microscopy where only 40.2 % want to repeat it at the end of treatment. If patient didn't come to take medicine at their schedule time 80.4 % providers would visit patients home.(Table4)

Table 4: Attitude and practices of DOTS providers about Tuberculosis

Attitude and practices variable	Sample (n =102) (%)
Action taken with suspected TB patient	
Ask for 2 sputum microscopy	84 (82.4)
Refer to doctor	59 (57.8)
Would trace patient's contacts	
yes	79 (77.5)
Repeat sputum examination for cat I patients	
At the end of intensive phase	72 (70.5)
At four month	20 (19.6)
At the end of treatment	41 (40.2)
Would trace patient if don't came to take medicine	
Yes	82 (80.4)

Table 5 show attitude and practices score of DOTS providers and their association with good knowledge about Tuberculosis. Only 36.3 % providers had score > 8 or good attitude and practice of TB. Out of 37 providers who score > 8, 75.7 % had good knowledge about TB**.** (Table 5)

Table 5: Attitude and practices score of DOTS providers and their association with good knowledge about Tuberculosis

Attitude and practices score	Total sample (n =102) (%)	Good Knowledge (%)
≤ 4	9 (8.8)	00 (00)
5 - 8	56 (54.9)	30 (53.6)
>8	37 (36.3)	28 (75.7)

DISCUSSION

Using RNTCP guidelines for DOTS providers, 56.9% of DOTS providers had good knowledge about TB. Only 80.4% DOTS providers knew that TB is caused by bacteria and 98.1 % also knew the route of transmission. Majority of DOTS providers still considered X-ray as a diagnostic tool for tuberculosis. Regarding the awareness of correct definition of relapse, failure and treatment after default was 34.3%, 20.6%, 45.1% respectively. Attitude and practice was good in 36.3 % of DOTS providers. Level of knowledge was significantly associated with gender and education level of respondents.

Study conducted by Neeta Singla et al [11] showed that a substantial number of nurses had inadequate knowledge regarding causative factors, the importance of sputum examination and 56.5% general hospital nurses know TB is caused by Bacteria

Another study conducted in Iraq by D.S. Hashim et al[12] on health care workers showed that

95.5% had good knowledge about TB and this was significantly associated with age and job duration and 77.6%, 17.4%, 14.6% health workers know the correct definition of relapse, failure and treatment after default. This difference is noted because different method adopted in these studies and level of education is higher in study participants of Iraq.

Good knowledge is significantly associated with age and duration of job. More exposure and longer duration of work experience make DOTS providers more knowledgeable and guide their attitude and practice in positive direction While finding in our study is, younger providers and providers of work duration up to five years having better knowledge in comparison to older ones and those who have more than five year work experiences.

In our study, majority (71.6%) of DOTS providers were women. This suggest that local culture where women was less likely to work with TB patients for fear of infecting their family members specially their children and stigma of TB was reduced in due time and as knowledge increase about TB.

In present study, 82.4% providers asked for sputum microscopy in suspected case of cough of more than two weeks. Study conducted at Nairobi by J. M. Chakaya et.al.[13] showed that 45.1% of private health care providers did not consider sputum examination for AFB.

Whereas 59.0% Private practitioners of Pakistan advice chest X-ray and sputum for diagnosis of pulmonary TB (Mubashir Ahmed et.al.)[14].

National programme have had beneficial effect on the knowledge of DOTS providers. However, good knowledge did not influence their practice and attitude as only 36.3% providers having more than eight score for their attitude and practice.

CONCLUSION

Knowledge, attitude and practice (KAP) of DOTS provider is important for successful implementation of programme. Only 56.9 % of DOTS providers have good knowledge of Tuberculosis. Knowledge is good in those who have higher qualification and are in health related services. Knowledge increases with experience upto 5 years, after that it is declining, showing that the DOTS providers don't update themselves. Attitude and Practice of only 36.3 % of DOTS provider is very good.

RECOMMENDATION

Based on the finding of study continuous health education, training and rigorous supervision of DOTS providers by National TB programme RNTCP is required in more intense fashion. Training must be done before a person become a part of RNTCP and training programme of DOTS provider is essential every 6 month to keep them updated. The practice of DOTS provider should be supervised by higher authority more frequently so that actually treatment is provided in direct observation.

A positive collaboration between RNTCP and other health sector like private health care settings and NGOs are also recommended.

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