



A Study on Knowledge, Attitude and Practices among Front Line Health Workers Regarding Tuberculosis and DOTS

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Abstract

Introduction: Tuberculosis is one of the most serious public health problem globally. India alone accounts for one fourth of the global burden. Since 1993, DOTS strategy was adopted in Revised National Tuberculosis Control Programme in which front line health workers like ANM, anganwadi worker and ASHA are the main stay of the health care system. These frontline health workers play a vital role in the treatment of Tuberculosis. The present study aims to assess the knowledge, attitude and practices of frontline health workers regarding Tuberculosis and DOTS.

Materials and Methods: Across sectional observational study was carried out among frontline health workers of Sanganer block, Jaipur (Rajasthan) from September 2016 to September 2017. A predesigned, pre tested structured questionnaire was used to collect the information about knowledge, attitude and practices regarding tuberculosis and DOTS. Chi Square test and ANOVA were used to find the association. P-value <0.05 was considered as statistically significant.

Results: Highest mean score of knowledge was found among ANMs (26.12±2.48) while highest mean score of attitude was seen among MPHs (10.6±1.67). The highest mean score of practice in implementation of DOTS was found among ASHAs (11.37±1.70). 45.24% frontline health workers has good knowledge score where as 70.43% has good attitude score but only 25.45% had good practice score.

Conclusion: Good knowledge, positive attitudes and good practices pertaining to tuberculosis was observed among the frontline health workers but periodic trainings and skill development are necessary to fill the gap in some areas.

Keywords: Knowledge, Attitude, Practice, Front line worker, Tuberculosis, DOTS.

Introduction

Tuberculosis remains a major cause of morbidity and mortality worldwide with high prevalence in many low and middle-income countries. Six member states of South-East Asia Region (SEAR)

of WHO were listed in 30 high tuberculosis burden countries globally. India alone accounts for one fourth of the global burden of tuberculosis. In 1993, the World Health Organisation (WHO) declared tuberculosis as a global health

emergency. Since then, there has been an intense global effort to control this disease. In the mid-1990s a new international strategy-DOTS strategy (Directly Observed Treatment Short course) was launched by WHO for care and control of tuberculosis.^[1-3]

In the early 1990s, the National Tuberculosis Program (NTP) was treating 1.3 million patients per year but there was no impact on the prevalence of tuberculosis. In 1992, NTP highlighted the management weakness, over-emphasis on X-rays for diagnosis, under-utilization of laboratory services, frequent drug shortages and low rates of treatment completion, leading Government of India to decide for revitalization of programme with the assistance of international agencies.^[4]

In 1993, the Revised National Tuberculosis Control Programme (RNTCP) was started as a pilot project which was later expanded in phased manner to cover whole country. The programme was based on DOTS (the internationally recommended strategy for tuberculosis control) which promotes diagnosis by sputum smear microscopy, direct observation of treatment, standardized regimens, recording and reporting of notified cases, treatment outcomes and political commitment.⁴ DOTS is the most effective strategy available for controlling tuberculosis. It ensures that the patient adheres to treatment. The responsibility of treating the patient and ensuring that the patient does not miss even a single dose falls on the DOTS provider.^[5]

In remote, rural and urban slum areas of the country, responsibility of providing DOTS lies on front line health workers who are the main stay of the health care system. They are from the community and serve the local population; hence they are accessible and acceptable to the community and accountable to health care system. Frontline health workers could be accredited social health activist (ASHA), anganwadi worker (AWW), auxiliary nurse midwifery (ANM), multi-purpose health worker (MPHW) and community volunteers.

As per data of State Tuberculosis Unit (STU) of Rajasthan, more than 95% of frontline health workers of the state have been provided training for RNTCP program. Training period has been different for frontline health workers, for ASHA training period is 2 days whereas for ANM, MPHW, lab technician and pharmacist it is for 1 day. The present study aims to assess the knowledge, attitude and practices of frontline health workers regarding tuberculosis and DOTS, to assess various determinants influencing knowledge, attitude and practices and to compare the knowledge, attitude and practices of trained against un-trained frontline health workers.

Materials and Methods

Across sectional, observational study was carried out to know the knowledge, attitude and practice (KAP) among front line health workers regarding tuberculosis and DOTS in rural and urban area of Sanganer block, Jaipur (Rajasthan) from September 2016 to September 2017. After taking the prior approval from institutional ethics committee the list of front line health workers was obtained from the office of State Tuberculosis Office and Block Chief Medical Officer's Office Sanganer block. Survey was conducted at the time of monthly sector meeting of rural and urban PHC. All the frontline health workers were sensitized regarding the subject of the survey, its aim and objectives, written and verbal consent was taken from the participants who were willing for the survey. Person who were unwilling to participate in spite of motivation and absent at the time of survey were excluded from study.

A pre designed and pre tested structured questionnaire was used to gather the information on a set of questions about knowledge (32 questions), attitude (13 questions) and practice (18 questions) regarding tuberculosis and DOTS. Proforma was explained to the participants of the survey in their local language then it was filled anonymously. Instructions were given not to write their name and place of work to ensure confidentiality. One proforma was given to each

participant and 20 minutes time was allotted to fill the proforma on their own. After collecting the filled proforma, the correct answers for the questions in the proforma were explained to the frontline health workers. Marks were allotted to each section (knowledge, attitude and practice) by giving 1 mark to each correct answer and zero mark for each wrong answer and un-attempted questions.

The collected data were entered in Microsoft Excel 2010. Chi Square test and ANOVA was used to find the association. P-value <0.05 was considered as statistically significant.

Results

In the rural and urban area of Sanganer block of Jaipur district, total 427 frontline health workers were working as DOTS provider under Revised National Tuberculosis Control Programme. Among 389 health workers interviewed in the present study 48 (12.33%) were male and 341 (87.66%) were females (Figure-1). As shown in Figure-2, 246 (63.24%) frontline health workers were accredited social health activist (ASHA), 81 (20.82%) auxiliary nurse midwifery (ANM), 5 (1.29%) multi-purpose health workers (MPHW), 47 (12.08%) laboratory technicians and 10 (2.57%) were pharmacists.

Table-1 shows the mean value of knowledge, attitude and practice of frontline health workers. Scoring was done according to the number of questions correctly answered. The mean knowledge score of ANM was the highest (26.12 ± 2.48), followed by MPHW (26.00 ± 2.54), laboratory technician (25.65 ± 2.22), pharmacist (25.60 ± 2.50). ASHA stood at the bottom of all the frontline health workers with the score of 22.19 ± 3.37 . MPHW had the highest mean attitude score with 10.60 ± 1.67 , followed by laboratory technician (10.59 ± 1.07), ANM (10.56 ± 1.15), ASHA (10.24 ± 1.22) and pharmacist (10.10 ± 0.99). Mean score for practices in implementation of DOTS was found maximum for ASHA (11.37 ± 1.70), followed by ANM (10.72 ± 2.11), laboratory technician (10.72 ± 1.69), MPHW

(10.40 ± 2.30) and pharmacist with the minimum score of 10.10 ± 2.33 . The difference observed among various frontline health workers about knowledge and practice of DOTS and tuberculosis was statistically significant ($P < 0.05$) while difference about attitude was not significant ($P > 0.05$).

Out of 389 frontline health workers studied, overall 45.24% subjects had good knowledge, 50.64% subjects had an average knowledge and only 4.11% had poor knowledge. 80.24% ANMs, 70% pharmacists, 68.08% laboratory technicians, 60% MPHWs and 28.04% ASHAs had good knowledge score while 67.88% ASHAs, 27.65% laboratory technicians, 20% MPHWs and pharmacists each and 17.28% ANMs had an average knowledge score. The difference observed among various frontline health workers about knowledge of DOTS and tuberculosis was statistically highly significant ($P < 0.01$). While accounting the attitude score of frontline health workers it was observed that 70.43% subjects had good score, 27.24% subjects had an average score and only 2.31% subjects had poor score. About 82.97% laboratory technicians, 70.32% ASHAs, 65.43% ANMs and 60% MPHWs and pharmacists each had a good attitude score. The difference observed about attitude regarding DOTS and tuberculosis was also statistically significant ($P < 0.05$) (Table-2).

The overall 25.45% subjects had good practice score, 72.49% subjects had an average practice score and only 2.05% subjects had poor score. About 30.86% ANMs, 25.20% ASHAs, 20% MPHWs and pharmacists each and 19.14% laboratory technicians had a good practice score. The difference observed about practice regarding DOTS and tuberculosis was also statistically highly significant ($P < 0.01$) (Table-2).

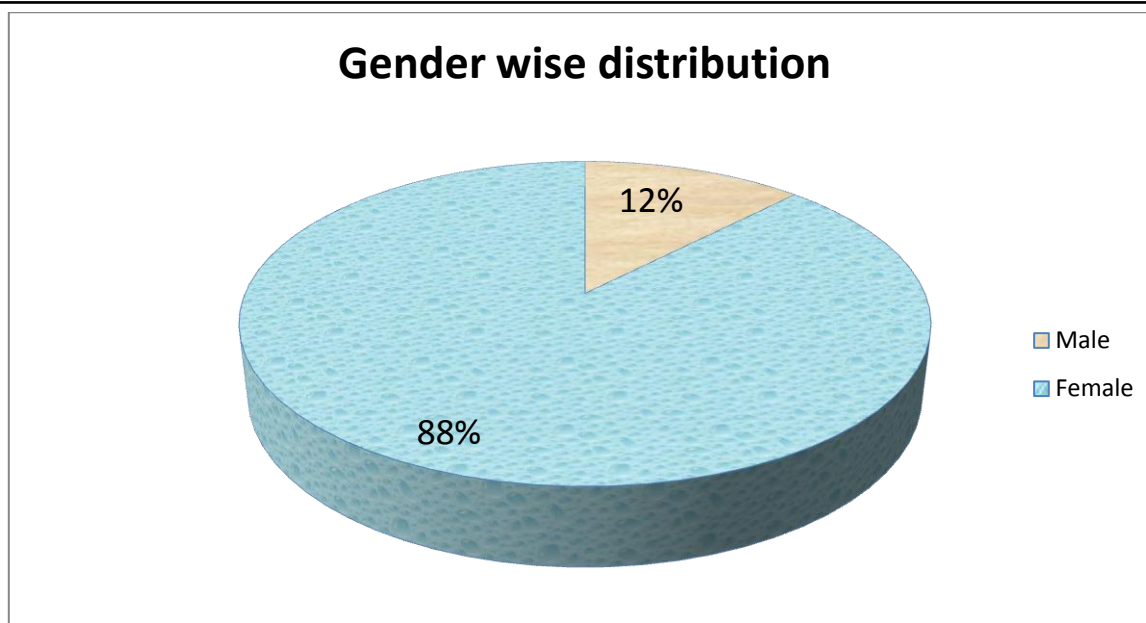


Figure-1: Gender wise distribution of frontline health workers

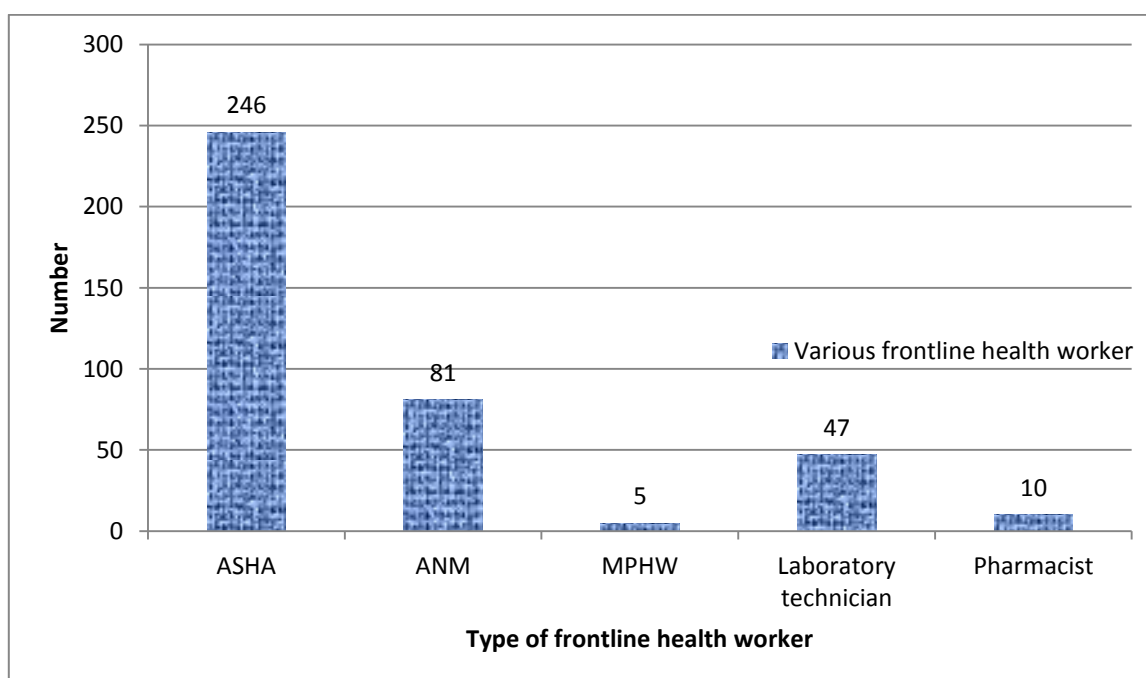


Figure-2: Type of various frontline health workers

Table-1: Mean score of knowledge, attitude and practice of different frontline health workers

Frontline health workers	Knowledge (Mean \pm S.D.)	Attitude (Mean \pm S.D.)	Practice (Mean \pm S.D.)
ASHA	22.19 \pm 3.37	10.24 \pm 1.22	11.37 \pm 1.70
ANM	26.12 \pm 2.48	10.56 \pm 1.15	10.72 \pm 2.11
MPHW	26.00 \pm 2.54	10.60 \pm 1.67	10.40 \pm 2.30
Laboratory technician	25.65 \pm 2.22	10.59 \pm 1.07	10.72 \pm 1.69
Pharmacist	25.60 \pm 2.50	10.10 \pm 0.99	10.10 \pm 2.33
ANOVA Test	p = 000	p = 0.128	p = 0.006

Table-2: KAP score of different frontline health workers

KNOWLEDGE SCORE							
Frontline health workers	Good(> 24) n (%)	Average(16-24) n (%)	Poor(<16) n (%)	Total n (%)	χ^2 (df)	P-value	
ASHA	69 (28.04)	167 (67.88)	10 (4.06)	246 (100)	89.39 (8)	0.000	
ANM	65 (80.24)	14 (17.28)	2 (2.46)	81 (100)			
MPHW	3 (60.00)	1 (20.00)	1 (20.00)	5 (100)			
Laboratory technician	32 (68.08)	13 (27.65)	2 (4.25)	47 (100)			
Pharmacist	7 (70.00)	2 (20.00)	1 (10)	10 (100)			
Total	176 (45.24)	197 (50.64)	16 (4.11)	389 (100)			
ATTITUDE SCORE							
Frontline health workers	Good (> 9) n (%)	Average (6-9) n (%)	Poor (<6) n (%)	Total n (%)	χ^2 (df)	P-value	
ASHA	173 (70.32)	71 (28.86)	2 (0.81)	246(100)	19.08 (8)	0.014	
ANM	53 (65.43)	25 (30.86)	3 (3.70)	81(100)			
MPHW	3 (60.00)	1 (20.00)	1 (20.00)	5(100)			
Laboratory technician	39 (82.97)	6 (12.76)	2 (4.25)	47(100)			
Pharmacist	6 (60.00)	3 (30.00)	1 (10.00)	10(100)			
Total	274 (70.43)	106 (27.24)	9 (2.31)	389(100)			
PRACTICE SCORE							
Frontline health workers	Good (> 12) n (%)	Average (8-12) n (%)	Poor (< 8) n (%)	Total n (%)	χ^2 (df)	P-value	
ASHA	62 (25.20)	183 (74.39)	1 (0.40)	246(100)	20.53 (8)	0.008	
ANM	25 (30.86)	52 (64.19)	4 (4.93)	81(100)			
MPHW	1 (20.00)	3 (60.00)	1 (20.00)	5(100)			
Laboratory technician	9 (19.14)	37 (78.72)	1 (2.12)	47(100)			
Pharmacist	2 (20.00)	7 (70.00)	1 (10.00)	10(100)			
Total	99 (25.45)	282 (72.49)	8 (2.05)	389(100)			

Discussion

In the present study, the mean knowledge score of ANM was found to be highest (26.12 out of 32) whereas ASHA has the minimum knowledge score (22.19 out of 32) among the frontline health workers. Overall 45.24% subjects had good knowledge and 50.64% subjects had an average knowledge. It was very close to the previous KAP studies done among frontline health workers. Minnery et al^[6], quoted that mean knowledge score among 301 health workers was 10.1 out of 15 in their study at Peru. Nnanna et al^[7], in their study at Nigeria said that only 27% subjects had a good knowledge score out of 52 subjects in the study. Sagare et al^[8], in their study at Pune stated that out of 43 subjects, good knowledge score was observed among 34 subjects with the mean score of 6.58 out of 10. Bhawnani et al^[9], in their study in Raipur, observed that out of 136 participants, 56 participants (41.18%) had good knowledge score whereas 75 participants (55.15%) had

average knowledge score. Ekuma et al^[10], in their study in Nigeria, observed that overall knowledge score of 182 health workers was above average. Gupta et al^[11], in his study at Meerut found that majority of participants (56.7%) had average score. Srivastava et al^[12], in their study in Gwalior, found that, mean knowledge score of government practitioners was 9.8 as compared to private practitioners which was 6.1. Hashim et al^[13], in their study in Iraq, observed that 98% health workers had good knowledge score about tuberculosis. Jain et al^[14], in their study in Ujjain, found that out of 102 subjects, 16 subjects (15.7%) had excellent knowledge score whereas 42 subjects (41.2%) had good knowledge score. The mean attitude score of MPHW was found to be highest (10.6) and mean practice score of ASHA was found to be highest (11.37) whereas pharmacist has the minimum score in both among attitude (10.1) as well as in practice (10.1). Jain et al^[14] observed in their study that out of 102

participants only 37 DOTS providers had good attitude and practice score, whereas out of these 37 participants only 28 (75.7%) participants had good knowledge about tuberculosis. Hashim et al^[13], in their study in Iraq, observed that there was a significant association between knowledge, attitude and practices. Higher the knowledge higher the attitude score. Higher the knowledge higher the practice score. This finding was contrary with present study.

Conclusion

ASHAs and ANMs had good attitude and practice regarding tuberculosis and DOTS, but knowledge was lacking among ASHAs. We had found that ASHAs had good training skills, similar training programs should be provided to other frontline health workers so as to form a good foundation. Motivation should be given to all the frontline health workers so that their good knowledge and attitude is incorporated in their practice.

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