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Original Article

A descriptive study to assess the knowledge and practices of Community DOTS providers regarding DOTS services provided under Revised National Tuberculosis Control Programme (RNTCP) in selected Primary Health centres and Sub centres of Distt. Faridkot.

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ABSTRACT:

BACKGROUND: Tuberculosis (TB) is one of the top 10 causes of death worldwide. In 2015, 10.4 million people fell ill with TB and 1.8 million died from the disease (including 0.4 million among people with HIV). Six countries account for 60% of the total, with India leading the count, followed by Indonesia, China, Nigeria, Pakistan and South Africa. Directly Observed Treatment Short course (DOTS) has been declared as the global strategy for tuberculosis (TB) control by the World Health Organization (WHO) since 1991. The aim of the study was to assess the knowledge and practices of community DOTS providers regarding DOTS services in selected primary health centres and sub centres of district Faridkot. **METHODS:** A descriptive research design was used. Study setting was CHC Bajakhana, Faridkot. Sample size was 100. Purposive sampling technique was used. A socio demographic sheet, a structured knowledge questionnaire and a self reported checklist were used for data collection. **RESULTS:** Mean knowledge score was 15.9700 and S.D was 2.4390. 36% of community DOTS providers had adequate knowledge, whereas 64% had inadequate knowledge. Mean practice score was 10.6000, and S.D was 1.3999. 80% of the participants had good practice in providing DOTS services, whereas 20% had average practice. 100% of the participants ensure collection of empty blister packs. The least percentage (74%) checks for medication side effects. A statistically significant association was found between knowledge and source of information. Practice was significantly associated with number of DOTS cases completed. **CONCLUSION:** In-service training programmes should be organized to make the community DOTS providers aware about DOTS services, hence further promote the practices of delivering DOTS services to render the TB treatment more effective to combat the deadly disease.

KEYWORDS: knowledge, practice, community DOTS providers, DOTS services, RNTCP.

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INTRODUCTION

Tuberculosis infectious is a disease caused by Mycobacterium tuberculosis (MTB). Tuberculosis generally affects the lungs, but can also affect other parts of the body. The classic symptoms of active TB are chronic cough with blood-containing sputum, fever, night sweats, and weight loss.¹ Tuberculosis is spread through the air when people who have active TB in their lungs cough, spit, speak, or sneeze.² Prevention of TB involves screening those at high risk, early detection and treatment of cases,

and vaccination with the bacillus Calmette-Guérin vaccine.³ India is the country with the highest burden of TB disease in the world. The World Health Organisation (WHO) TB statistics for India for 2015 give an estimated incidence figure of 2.2 million cases of TB for India out of a global incidence of 9.6 million. Total TB incidence was 2,840,000 and HIV positive TB incidence was 113,000. HIV positive TB mortality was 37,000 but HIV negative TB mortality was 480,000.⁴ The main TB statistics for each state in India also come from the government Revised National

Tuberculosis Control Programme (RNTCP). These statistics depict that in 2015, in Punjab, the total population covered by RNTCP was 29,000,000. Smear positive patients diagnosed were 22,309. However, total patients registered for treatment were 38,625.⁵ Revised National Tuberculosis Control Program (RNTCP) is the state-run tuberculosis (TB) control initiative of the Government of India. As per the National Strategic Plan 2012–17, the program has a vision of achieving a "TB free India", and aims to achieve Universal Access to TB control services. The program provides, various free of cost, quality tuberculosis diagnosis and treatment services across the country through the government health system.⁶

MATERIALS AND METHODS

Research Approach & Design: Quantitative approach and non experimental descriptive study design was chosen for the study.

Research setting: The present study was conducted in Community Health Center Bajakhana, Faridkot covering all the primary health centres and sub-centres under this community health centre.

Sample size and Sampling technique: Total sample size was 100 community DOTS providers, who were selected from CHC Bajakhana, Faridkot with the help of purposive sampling technique.

Research tool: Research tool used for the study consists of three parts. Part 1 consists of a socio-demographic profile of the participants. Part 2 consists of a structured knowledge questionnaire and part 3 is a self-reported checklist to assess the practice of community DOTS providers regarding DOTS services provided under RNTCP.

ETHICAL CONSIDERATIONS

This study has been approved by the research and ethical committee of University College of Nursing and Baba Farid University of Health Sciences, Faridkot, Punjab. A written permission was taken from the Senior Medical Officers of CHC Sadiq and CHC Bajakhana, district Faridkot to conduct the pilot study and main study respectively. Written informed consent was also taken from each participant after informing them about study and its objectives.

RESULTS

Statistical analysis of the data was done in accordance with the objectives. It was done by using the descriptive and inferential statistics i.e. by calculating frequency, percentage distribution and by applying chi square test. The level of significance was set at 5%. Table -1 describes the socio-demographic profile of the respondents. 100 DOTS providers were taken for the study. Maximum DOTS providers i.e. 51% were in the age group of 25-35 years followed by 43% in the age group of 36-45 years and only 6% in the age group of 46-55 years. The results indicated that the educational qualification of majority of DOTS providers (39%) was matriculation followed by senior secondary (36%) which were further followed by middle (21%) and only 4% respondents were post graduates. As per number of DOTS cases completed, 58% respondents had completed 1-5 cases, 33% respondents had completed 6-10 cases, 5% respondents had not completed any case and only 4% respondents had completed above 10 cases. In regard of years of experience, majority of respondents i.e. 63% had more than 5 years of experience whereas, the second highest proportion of respondents 28% had 1-5 years of experience. The respondents

Directly Observed Treatment Short course (DOTS) has been declared as the global strategy for tuberculosis (TB) control by the World Health Organization (WHO) since 1991. This strategy has shown to reverse the TB epidemic in many countries. Principles of the DOTS strategy have had many contributions from research carried out in India.⁷ The present study was conducted to assess the knowledge & practices of community DOTS providers regarding DOTS services provided under RNTCP in the selected primary health centres and subcentres of district Faridkot and to find out the association of their knowledge and practices with the selected socio-demographic variables.

who had below 1 year were only 9%. As far as source of information is concerned, the results indicated that 81% respondents got information from training module followed by 15% respondents who obtained information from textbooks. 3% and 1% respondents obtained information from any other source and internet respectively. Table 2 depicts mean and standard deviation of knowledge score of the selected community DOTS providers regarding DOTS. Maximum possible score was 26. Maximum score obtained by the selected community DOTS providers was 22 and minimum obtained score was 11. Mean knowledge score was 15.9700, and standard deviation was 2.4390. Table 3 depicts the frequency and percentage distribution of knowledge score of selected community DOTS providers regarding DOTS services. 36% of the selected community DOTS providers had adequate knowledge regarding DOTS services, whereas 64% of the selected community DOTS providers had inadequate knowledge regarding DOTS services. Table 4 depicts mean and standard deviation of practice score of the selected community DOTS providers regarding DOTS. Maximum possible score was 12. Maximum score obtained by the selected community DOTS providers was 12 and minimum obtained score was 7. Mean practice score was 10.6000, and standard deviation was 1.3999. Table 5 depicts the frequency and percentage distribution of practice score of selected community DOTS providers regarding DOTS services respectively. None of the selected community DOTS providers reported poor practice. 80% of the selected community DOTS providers had good practice in providing DOTS services, whereas 20% of the selected community DOTS providers had average practice in providing DOTS services. Thus the second assumption made in the present study is true. Table 6 depicts that in terms of source of information, maximum community DOTS providers i.e. 31% possessing adequate knowledge obtained information from training module. Whereas, for 3% community DOTS providers with adequate knowledge the source of information was any other. Only 2% community DOTS providers who had adequate knowledge got information from textbooks. The chi square value of 9.4222 was found to be statistically significant at $p = 0.0240$ level. Thus, it was concluded that there was significant relationship between knowledge regarding DOTS services and source of information of community DOTS providers. Table -7 depicts that in terms of number of DOTS cases completed, 51% community DOTS providers having completed 1-5 cases had good practices, whereas 22% community DOTS providers expressing good practices had completed 6-10 DOTS cases. Only 4% community DOTS providers saying that they do good practice had completed above 10 DOTS cases. 3%

community DOTS providers who had not completed any DOTS case were also found in good practice category. The chi square value of 8.1968 was found to be statistically significant at p=0.0420 level. Hence, there was significant association between practice of DOTS services of community DOTS providers and number of DOTS cases completed by them.

Table 1 Frequency and percentage distribution of sample characteristics
N = 100

Sample characteristics		Frequency/ Percentage (n/%)
Age (in years)	25-35	51
	36-45	43
	46-55	6
Educational qualification	Middle	21
	Matriculation	39
	Senior Secondary	36
	Graduation & above	4
Number of dots cases completed	No case	5
	1-5	58
	6-10	33
	Above10	4
Years of experience	<1	9
	1-5	28
	More than 5	63
Source of information	Training module	81
	Internet	1
	Textbooks	15
	Any other	3

Table 2: Mean and Standard deviation of knowledge score of the participants regarding DOTS
N=100

Area	Maximum possible score	Maximum obtained score	Minimum obtained score	Mean(Score)	Standard Deviation
Knowledge Score	26	22	11	15.9700	2.4390

Table 3: Frequency and percentage distribution of Knowledge Score of the study participants regarding DOTS
N=100

Sr. no.	Level of Knowledge	Range of knowledge score	Frequency/ Percentage (n/%)
1	Adequate knowledge (Above mean)	>16	36
2	Inadequate knowledge (below and equal to mean)	≤16	64

Table 4 Mean and Standard deviation of practice score of the study participants regarding DOTS
N=100

Area	Maximum possible score	Maximum obtained score	Minimum obtained score	Mean(Score)	Standard Deviation
Practice Score	12	12	7	10.6000	1.3999

Table 5 Frequency and percentage distribution of practice Score of the study participants regarding DOTS
N=100

Sr. no.	Level of practice	Range of practice score	Frequency/percentage (n/%)
1	Poor ($\leq 50\%$)	≤ 6	0
2	Average (51-75%)	7-9	20
3	Good ($>75\%$)	10-12	80

Table 6 Relationship of knowledge score with socio-demographic variables of the participants

N = 100

Socio-demographic variables	Knowledge score		N	df	Chi-square
	Adequate n (%)	Inadequate n (%)			
Age (in years)	25-35	18(18)	33(33)	51	2 1.2176 p=0.5439 NS
	36-45	17(17)	26(26)	43	
	46-55	1(1)	5(5)	6	
Educational qualification	Middle	8(8)	13(13)	21	3 0.9738 p=0.8076 NS
	Matriculation	12(12)	27(27)	39	
	Senior Secondary Graduation & above	14(14)	22(22)	36	
		2(2)	2(2)	4	
Number of DOTS cases completed	No case	0(0)	5(5)	5	3 3.2814 p=0.3501 NS
	1-5	22(22)	36(36)	58	
	6-10	13(13)	20(20)	33	
	Above 10	1(1)	3(3)	4	
Years of experience	<1	3(3)	6(6)	9	2 1.8443 p=0.3976 NS
	1-5	13(13)	15(15)	28	
	More than 5	20(20)	43(43)	63	
Source of information	Training module	31(31)	50(50)	81	3 9.4222 p=0.0240 S
	Internet				
	Textbooks	0(0)	1(1)	1	
	Any other	2(2)	13(13)	15	
		3(3)	0(0)	3	

Table 7: Relationship of practice score with socio-demographic variables of the participants

Socio- demographic variables		Practice Score			N	df	Chi-square
		Poor n(%)	Average n(%)	Good n(%)			
Age (in years)	25-35	0(0)	10(10)	41(41)	51	2	0.7239
	36-45	0(0)	8(8)	35(35)	43		p=0.6963
	46-55	0(0)	2(2)	4(4)	6		NS
Educational qualification	Middle	0(0)	3(3)	18(18)	21	3	1.5167
	Matric	0(0)	10(10)	29(29)	39		p=0.6784
	Senior	0(0)	6(6)	30(30)	36		NS
	Secondary Graduation & above	0(0)	1(1)	3(3)	4		
Number of DOTS cases completed	No case	0(0)	2(2)	3(3)	5	3	8.1968
	1-5	0(0)	7(7)	51(51)	58		p=0.0420
	6-10	0(0)	11(11)	22(22)	33		S
	Above 10	0(0)	0(0)	4(4)	4		
Years of experience	<1	0(0)	3(3)	6(6)	9	2	1.5873
	1-5	0(0)	4(4)	24(24)	28		p=0.4521
	Above 5	0(0)	13(13)	50(50)	63		NS
Source of information	Training module	0(0)	16(16)	65(65)	81	3	4.7531
	Internet						p=0.1907
	Textbooks	0(0)	1(1)	0(0)	1		NS
	Any other	0(0)	3(3)	12(12)	15		
		0(0)	0(0)	3(3)	3		

DISCUSSION

The findings of the present study depict that among 100 community DOTS providers 36% had adequate knowledge regarding DOTS services, whereas 64% had inadequate knowledge regarding DOTS services. Mean knowledge score was 15.9700 (61.42%) out of total possible 26 points, and standard deviation was 2.4390. These findings are consistent with a study conducted by **Noé A, Ribeiro RM, Anselmo R, Maixenchs M, Sitole L and Mungambe Ket al (2015)**⁸ which showed that the average knowledge score was 14.89 points (57.26%), (SD=3.61) out of a total possible 26 points. The similar findings have been revealed by the study of **Malangu N, Omotayo D. and Adebanjo (2010)**⁹ which showed that less than half (47.3%) of the participants had a good level of knowledge about MDR-TB.

The present study findings depict that 80% of the selected community DOTS providers had good practice in providing DOTS services, whereas 20% of the selected community DOTS providers had average practice. These findings are supported by a study conducted by **Sagare M., Bogam R. R., Murarkar S. K., Patil U. P. and Ghate M. M.(2011)**¹⁰ which revealed good knowledge, favorable attitudes and practices pertaining to tuberculosis amongst ASHAs. These findings are contradictory to a study conducted by **Jain M, Chakole SV, Pawaiya AS and Mehta SC**

(2011)¹¹ in which practice of only 36.3 % of DOTS providers is very good.

CONCLUSION

The findings of the study revealed that majority of the community DOTS providers i.e. 64% had inadequate knowledge regarding DOTS services. However practice of 80% of the community DOTS providers was good. Therefore, it is concluded that in-service training programmes should be organized to make the community DOTS providers aware about DOTS services to render the TB treatment more effective to combat the deadly disease.

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