

Effect of Educational Intervention on Knowledge and Attitude Regarding Tuberculosis among Uncertified Rural Practitioners in Singur, West Bengal

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Abstract:

Introduction: Though two-third of rural healthcare is served by URPs, most of them lack in proper training on treatment of Tuberculosis. **Objective:** To evaluate effect of educational intervention on perception of Tuberculosis management among URPs. **Methodology:** Knowledge and Attitude of participants were assessed using a predesigned questionnaire before and after an educational intervention. **Results:** Pre-intervention assessment revealed that majority (92.9%) had heard about PTB. Only 39.3% knew at-least 3 sites of EPTB. Nearly one-third knew about daily regime but 10.7% could name all five first-line ATDs. Few responded that Levofloxacin (25%), Moxifloxacin (10.7%), Amikacin (7.1%) should be avoided in chest symptomatics. Knowledge of punishment for intentional non-notification (10.7%) was poor. Only 42.9% opined for ATD use in pregnant and children. After intervention, knowledge had improved significantly ($P < 0.001$). Attitude improved with no statistical significance. **Conclusion:** Educational intervention can improve knowledge of Tuberculosis among URPs and regular reinforcement is recommended for such programs.

Key Words: Uncertified rural practitioners, tuberculosis, notification

Introduction :

Uncertified Rural Practitioners (URPs) occupy an important position in healthcare system in India. URPs also known as Quacks or Rural medical Practitioners are individuals who practice modern medicine without any formal training or legal sanction⁽¹⁻⁴⁾. West Bengal have roughly 2 lakh URPs practicing currently.⁽⁵⁾

URPs often receive some training on modern medicine from several institutes without any credibility or they learn by handling patients while working under any registered doctor. They usually provide medical services on outpatient basis in their chambers or during domiciliary visits. Some of them even perform minor surgeries. URPs often prescribe antibiotics despite their lack of knowledge regarding antibiotic use and thus provide quick relief to their clients^(1,3,4,6,7). It is a well known fact that incorrect usage of antibiotics lead to antimicrobial resistance. On the other hands, India has the highest burden of Drug Resistant TB (DR-TB) with a high rate of treatment failure and death.

Additional fluoroquinolone resistance was observed in 21.8% DRTB patients.⁽⁸⁾

Nearly 70% of all primary health care are provided by URPs and despite all the perilous practices observed among, they continue to remain an important part of health system especially in rural India.⁽⁹⁻¹¹⁾. Rural healthcare severely lack doctors while registered private practitioners are available but often not accessible in odd hours and not affordable by economically weaker sections of society. Several studies have shown URPs covered nearly 58% to 76% of total rural healthcare professionals and become an unavoidable part of rural healthcare system.^(2,3,7,10-13)

There is paucity of studies regarding knowledge and attitude regarding Tuberculosis among URPs. In this context current study was aimed to assess knowledge and attitude regarding Tuberculosis management among URPs and to evaluate the improvement of this knowledge and attitude following an educational intervention.

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Methodology:

An interventional study with single group pre-post design was conducted from August to October 2018 (from conception of the study to analysis) among URPs practicing at Singur, West Bengal. All URPs who were practicing in the study area were included and URPs who did not give informed written consent were excluded.

Study Tools:

1. Pre-designed Bengali questionnaire with the following sections
 - A. Socio-demographic and occupational characteristics (12 items)
 - B. Knowledge regarding Tuberculosis and its management (24 items)
 - C. Attitude regarding Tuberculosis and its management (7 items)
2. Audiovisual equipment to conduct Educational intervention (Lecture & demonstration for four teaching hours) on following domains.
 - A. Sites, Transmission and signs and symptoms of TB.

- B. Management of TB and assistance to patient under RNTCP
- C. Judicial use of antibiotics in terms of MDR TB
- D. Notification of TB: importance, punishment and assistance.

Operational Definitions :

Training in healthcare : Any formal/non-formal training taken to treat patients as per allopathic system of medicine

Job experience: number of years practising allopathic system of medicine.

Prior Training of TB : Any formal/non-formal training in past on Tuberculosis

Method of data collection: Permission of Institutional Ethics Committee was taken prior to the study. A list of URPs was prepared with help of local leaders. All 32 enlisted URPs were approached and 28 URPs volunteered to participate. Educational session was conducted in Auditorium of RHUTC. On the day of intervention, informed written consent was obtained from all participants and their knowledge and

Table 1: Effect of Intervention on Knowledge Regarding TB (n=28)

Items for Knowledge Assessment	Correct Knowledge		P value ¥
	Pre-intervention Number (%)	Post-intervention Number (%)	
Site of Pulmonary TB	26 (92.9)	28 (100)	0.500
Site of Extra-Pulmonary TB (Any three)	11 (39.3)	25 (89.3)	<0.001
Mode of Transmission of PTB (Any one)	19 (67.9)	24 (85.7)	0.125
Mode of Transmission of EPTB (Any one)	8 (28.6)	15 (53.6)	0.039
Four cardinal signs of PTB	14 (50)	23 (82.1)	0.022
Signs of EPTB (Any one)	16 (57.1)	25 (89.3)	0.012
Mode of diagnosis of TB			
Microscopy	27 (96.4)	28 (100)	0.999
X-ray	26 (92.9)	27 (96.4)	0.999
CBNAAT	0	16 (57.1)	<0.001
Treatment of TB			
All 5 First-line Anti Tubercular Drug (ATD)	3 (10.7)	10 (35.7)	<0.001
Daily Regime in RNTCP	11 (39.3)	25 (89.3)	0.001
Cash benefit to TB Patient in RNTCP	10 (35.7)	27 (96.4)	<0.001
Anyone can be Community DOTS provider	11 (39.3)	24 (85.7)	<0.001
Cash benefit to DOTS provider in RNTCP	10 (35.7)	25 (89.3)	<0.001
Antibiotic for cough >2 week			
Levofloxacin	7 (25.0)	18 (64.3)	0.001
Moxifloxacin	3 (10.7)	14 (50.0)	0.008
Amikacin	2 (7.1)	9 (32.1)	0.016
Knowledge of Multi Drug Resistant (MDR TB)	18 (64.3)	28 (100)	0.012
Notification of TB			
Mandatory notification of TB	21 (75)	27 (96.4)	0.070
Punishment for intentional non-notification	3 (10.7)	26 (92.9)	<0.001
Cash benefit for TB notification in RNTCP	4 (14.3)	24 (85.7)	<0.001
Knowledge Score (Median, IQR) ?	13.25, 1.91	20.32, 2.12	< 0.001

¥ McNemar Test ψ Wilcoxon Signed Rank test

attitude on tuberculosis were ascertained using a predesigned self-administered questionnaire. Following the educational intervention the participants were requested to come on a fixed day two weeks following the intervention to collect certificates of participation on which day all were reassessed using the same questionnaire.

Data Analysis : Data were analysed in MS Excel and SPSS version 16(SPSS for Windows, version 16.0, SPSS Inc. Chicago, USA). Composite knowledge and attitude scores were calculated. Correct knowledge was scored as one and incorrect knowledge was scored as zero. Mean score (ranging from 0 to 1) was taken for items with multiple correct responses to provide equal weightage (0-1) to each item in knowledge domain. For scoring of attitude correct attitude was scored as two, incorrect attitude was scored as zero and indeterminate response was scored as one. Change in knowledge and attitude (Pre and Post) was measured by Wilcoxon signed Rank test and McNemar test as data was not normally distributed. P-value < 0.05 was considered as the level of significance.

Results:

Majority were Hindus (92.9%).All of them practiced Allopathic system of medicine. Most received training in healthcare from private institute (39.3%) or as an apprentice of registered doctor (39.3%). Nearly two-third (60.7%) received training on TB in the past. Most of them were practising for ≥ 20 years (79.5%) and they attend to ≥ 10 patients/day (89.3%). Majority also responded that they did not treat TB patients on their own (96.4%).

Table 2 reveals that more than half (57.1%) disagreed that sputum negative patients should be considered tuberculosis

negative. Most of them also denied for stoppage of treatment with improvement of symptoms (92.9%). Only 42.9% believed that ATD can be given to pregnant women. Similar number of participants responded that ATD can be given to children. Correct attitude improved for all the above mentioned items after the intervention; however this change was not statistically significant.

Discussion:

Mukherjee et al found that most of the URPs practised allopathic system (85.6%) and provided antibiotic to their patients (95%). Half of them knew correct dosing of antibiotics.⁽¹¹⁾ Poor knowledge regarding antibiotic use in current study was comparable with the findings of Mukherjee et al.

Dasgupta et al. studied on 233 urban private practitioners, comprising both registered and unregistered practitioners, in Kolkata in 2008 and found that only 9.9% urban private practitioners notified TB cases. Nearly one-fourth had knowledge about cough more than 3 week as a symptom of TB (21%) and about all five first line ATDs (29.2%).Good knowledge and proper practice were present in 24% and 19.7% of the practitioners, respectively.⁽¹⁴⁾ Poor knowledge of tuberculosis among private practitioners in the study by Dasgupta et al corresponds to this study.

Mangal et al studies on knowledge of TB among grass root level practitioners in Jaipur in 2015 show that 64% did not notify TB cases. Only 25.5% believed that cough for more than 2 week could be a symptom of TB. Majority diagnosed TB by sputum microscopy (78%) and X-ray(80%).More than two-thirds (70%) referred the suspected TB cases to other centres, mostly government (86%)..⁽¹⁵⁾ Current study found slightly better knowledge among the participants.

Table 2: Effect of Intervention on Attitude Regarding TB (n=28)

Items for Attitude Assessment	Correct Attitude Regarding Tuberculosis (Disagree)		
	Pre-intervention Number (%)	Post-intervention Number (%)	P value Ψ
Í ÖPÖ ÖÑNMPÖÑ ÖMPÖÖPÖÖ ÖÑ NÑ NÖÖÖNÖNÑ tuberculosis negative.	16 (57.1)	20 (71.4)	0.125
Í ÖPÖÖPÖÖ ÖP ÖÑNÑNÑ PÖ Ö MÖPÖ NÖÖNÖNÖPÖÖR of patient.	17 (60.7)	25 (89.3)	0.008
Í È ÖMPÖÖPÖÖ ÖÑ NÑ NÑNÖNÑ NÖNÑ ÖNÖ ÖPÖÖ CE are improved.	18 (64.3)	24 (85.7)	0.031
Í ÖNMPÖ NÖP NÖD NÑ ÖÖÖNÑ NÑNÖNÑ NÖPÖÖNÑ symptoms are improved.	26 (92.9)	27 (96.4)	0.999
Í ÖN Ö NÖ ÖÖ Ö NÖNMPÖÖ R ÖÖPP NÖNÖÖCE instruction. Ψ	19 (67.9)	26 (92.9)	0.016
Í ÖNÖMÖP R ÖÖ NÖ ÖÖP Ö ÖÖPPÖN MÖPÖtubercular drugs	12 (42.9)	19 (67.9)	0.016
FOÖNÖ ÖÖP Ö ÖÖPPÖN MÖPÖtubercular drugs.	12 (42.9)	20 (71.4)	0.008
Attitude Score (Median, IQR) ?	9.00 , 5.50	10.00, 4.00	0.054

Ψ McNemar Test Ψ Wilcoxon Signed Rank test

Das et al conducted an open label randomized controlled trial among 304 informal health care providers in Birbhum to find a positive impact of training on proper case management with significant improvement in history taking and correct case management. No significant improvement in behaviour of antibiotic misuse or unnecessary use of harmful medicine was observed⁽¹⁶⁾. However, current study showed significant improvement in knowledge regarding correct antibiotic use among the URPs.

In spite of intensive search the researchers could not find any such similar studies where knowledge and attitude of URPs have been assessed following an educational intervention.. One of the major drawbacks of this study was low sample size which disabled the researchers to conduct any stratified analysis. The questionnaire was not pretested. However content and face validity were ascertained by experts from AIH&PH. Moreover this study was not free from biases like recall bias and social desirability bias.

Conclusion :

Improvement of correct knowledge and attitude regarding tuberculosis is essential for correct practice. The study highlighted that educational intervention can promptly improve knowledge gap regarding TB management and notification. After the intervention improvement of attitude was seen but the change was not statistically significant. Thus such repeated interventions are very much needed for marked improvement of attitude which in turn will lead to improvement of their practice. Further studies with larger sample size are also needed.

Source of Support - Nil

Conflicts of interest - Nil

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