



A Study on the Impact of Information Education Communication Activities under RNTCP through Patient Perspective in Thrissur District, Kerala

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Abstract

Background

Information, education, and communication activity is a cross-cutting and integrated part of the National Tuberculosis Elimination Programme (NTEP). IEC is used in synonym with Advocacy Communication Social Mobilization (ACSM) and is an important component of TB elimination.

Objectives

To assess the knowledge and attitude of tuberculosis patients at the start of tuberculosis treatment and to assess the knowledge, attitude, and practice of tuberculosis patients after two months of tuberculosis treatment in Thrissur district. To assess the change in knowledge, attitude, and practice of tuberculosis patients at the start and after two months of tuberculosis treatment.

Methodology

A longitudinal study was conducted among 120 newly diagnosed TB patients in Thrissur district from September 2018 to January 2020. Knowledge and attitude-based questions were elicited at the start of treatment and after two months along with practice-based questions. Statistical analysis included descriptive statistics, Mc Nemar test using SPSS statistical software version 23.

Result

The mean age of the study population is 48.21±16.52 years and has more men 84(70%). Among the study subjects, only 6(5%) subjects knew that anybody can have the disease and after 2 months, it was 16(13.3%). And the change is statistically significant p value = 0.0001. Among the study subjects, only 10(8.4%) discontinued drug intake during 2 months of treatment.

Conclusion

In this study, only 38.4% of subjects knew TB spreads through air when a patient coughs/sneezes. None of the children living with TB patients were tested/ given prophylaxis for TB prevention. Even though there was a significant change within two months of treatment for most variables, there is room for more improvement in IEC dissemination.

Keywords: ACSM, IEC, KAP study, Longitudinal study, NTEP, RNCTP, Tuberculosis

Introduction

The operational definition of IEC refers to a “public health approach aiming at changing or reinforcing health-related behaviours in a targeted audience, concerning a specific problem and within a pre-defined time, through communication methods and principles”. Strategies of IEC include planning,

implementation, monitoring, and evaluation which are multi-centric and client-based.(1) (5) IEC as a whole combines various strategies, approaches, and methods to enable people and communities to actively take part in achieving, protecting and sustaining ones’ health. IEC process helps in

empowering people to make commitments and adapt to new behaviours for a healthy change. IEC helps in increasing the reach of health-related services and also in improving the quality of the services. It can also implement a feedback mechanism.(2) For IEC strategies, there are three main types of approaches such as interpersonal or individual, group and mass approach.(3)

IEC is used in synonym with Advocacy Communication Social Mobilization (ACSM) and is an important component of TB elimination. IEC/ACSM has to be implemented according to need base, has to be locally and culturally appropriate and may be decentralized.(4) IEC for tuberculosis focuses also on the disadvantaged groups like women, children, and illiterates e.g.: community engagements using pictorial materials for illiterates and in Anganwadis where women seek services or schools. All these are favourable grounds for creating awareness among children and adolescents.(5) India has achieved various milestones regarding TB control since independence. But India is listed among top 20 high burden countries and a significant contribution to incidence and mortality concerning TB is by India. As per the WHO Global TB report of 2019, India has around 199 new cases per 1 lakh population which is around 2,690,000 patients.(6) As a feather in the cap, India has witnessed a decrease in cases by almost 50000 in 2018.(7) Though India has a high disease burden, Kerala has a TB incidence of 44 cases per 1 lakh population.(8)

To bring down the incidence of tuberculosis, awareness on various aspects like spread, cough hygiene, treatment, and availability of services is inevitable along with treatment and cure. The magnitude of effective IEC activities is huge and major focus has to be given to TB patients and their families are made aware of the disease and its importance and make a difference in the community. This study may pave the way to enhance IEC activities so that it can be a boon to the road to elimination of TB. Unless TB patients are educated on the disease aspects, there is likely that they might not comply with the treatment or check-ups, or investigations. IEC activities can do miracles in revoking the existing stigma and discrimination pertaining to TB. This study aims to understand the impact of Information Education Communication activities under RNTCP through patient perspective

in Thrissur district, Kerala with objectives to assess the knowledge and attitude of tuberculosis patients at the start and the knowledge, attitude and practice after two months of TB treatment also to assess the change in knowledge, attitude, and practice of tuberculosis patients at the start and after two months of TB treatment.

Methodology

A longitudinal study was done among 120 Tuberculosis patients of >15 years in Thrissur district between 2018 and 2020. All patients registered in DOTS who are 15 years and above and were newly diagnosed were included. Sample size was calculated using prevalence and predicted change from a study conducted by Saranya et al in Tamil Nadu.(9) A pretested questionnaire validated using a pilot study was used to collect data by interview method in native language of Malayalam. The questionnaire includes socio-demographic variables, knowledge and attitude-based questions (Likert scale) which were elicited at the start of treatment and again after two months of treatment along with practice-based questions. The data were coded and analyzed using the statistical software SPSS 23. Baseline characteristics of the study subjects were expressed in frequency, percentage, mean and standard deviation. The change in knowledge and attitude were checked with McNemar and Chi-square tests at 95% confidence intervals and p value of <0.05.

Results

Socio-Demography:

The mean age of the study population is 48.21 ± 16.52 years. In this study, men constitute 84(70%) and women 36(30%). Among the study population, only 2(1.7%) of them were illiterate. An equal proportion of the subjects belonged to high school and graduate level of education which was 33(27.5%) each. In this current study, 66(55.4%) of the subjects were employed. And 54(44.6%) of the subjects were unemployed. Among the study subjects, 58(47.9) belonged to the pink colour ration card category and only 4(3.3%) belonged to the yellow ration card category. Table 1 refers to habits of study subjects.

Only 30(25%) of the study population had a child of less than 6 years of age in their homes and 90(75%) did not have a child of less than 6 years in their homes. Of the total, 91(75.8%) had pulmonary

tuberculosis and 29(24.2%) had extrapulmonary tuberculosis. Only 1(0.9%) subject were multi-drug resistant category and the rest 119(99.1%) belonged to category 1.

Knowledge At Start Of Treatment And After 2 Months:

Among the study population, 46(38.3%) did not receive any information on TB at the start of treatment and when assessed after two months of treatment all the study subjects had received information on tuberculosis. Among the study subjects, at the start of treatment, only 16(13.4%) had received information from the health system (health professionals and print (brochures, pamphlets, wall writings, hoardings)/visual media). Family/ friends had been the source of information for 58(48.3%) of subjects at the start of treatment. Cough, weight loss, fever, fatigue was the most common combination of symptoms known by the subjects at the start of treatment that is 40.8%. Among the study subjects, only 6(5%) subjects knew that anybody can have the disease and after 2 months, it was 16(13.3%). And the change is statistically significant p value = 0.0001. Table 2 refers to the knowledge on communicability of disease at start of treatment and after 2 months

In this study, 46(38.4%) subjects knew TB spreads through air when a patient coughs/sneezes at the start of treatment, after 2 months, 93(77.5%) knew the same. In this study, at the start of treatment 50(41.7%) of the subjects knew smoking was a risk factor for TB and that increased to 100(83.3%) on assessing after two months of treatment. And the change is statistically significant p value = 0.0001. In the present study, at the start of treatment 27(22.5%) did not know about the curability of the disease and 116(96.7%) knew that the disease is curable on assessing after two months of treatment. And the change is statistically significant p value= 0.0001. Among the study subjects, on assessing after two months of treatment gastric irritation was the commonest side effect known by the patients 24(20.0). At the start of treatment highest number belonged to don't know category 95(79.2%) and on questioning, after two months of treatment it was 78(65.0). And the change is statistically significant p value=0.001. For the sputum disposal method, 35(38.5%) patients knew the method of burying deep

under soil without disinfecting it at start of treatment and also after 2 months. For the method of burying deep/burning/ flushing in a toilet after disinfection, only 1(1.1%) patient followed this at the start of treatment, and after 2 months, 3(3.1%) patients followed the same.

Attitude At Start Of Treatment And After 2 Months:

On assessing at the start of treatment 80(66.7%) subjects agreed that Tb requires regular treatment and after 2 months of treatment 94(78.3%) agreed to it. And the change is statistically significant p value = 0.0001. In this study, on assessing after two months of treatment 92(76.7%) agreed to the requirement on regular medical check-up and after two months of treatment and the change is statistically significant p value = 0.0001. Regarding the attitude on the use of personal protective measures by a TB patient, 8(6.7%) patients strongly agreed to it at the start of treatment and after 2 months, that increased to 12(10%). Even after 2 months, 20(16.7%) patients disagreed with the statement. The change is statistically significant p value = 0.0001.

On the attitude towards the need of testing a child who is living with a TB patient, 69(57.5%) disagreed with it at the start of treatment and on assessing after two months it was 46(38.3%). And the change is statistically significant p value = 0.0001. Most subjects 76(63.3%) agreed towards a TB patient mingling with society after 2 months of treatment. There were 29(24.7%) participants who disagreed with it at the start of treatment and it got reduced to 8(6.7%) on assessing after 2 months of treatment. And the change is statistically significant p value=0.0001. For the statement; a TB patient can go for work 25(20.8%) subjects agreed at the start of treatment and on assessing after 2 months of treatment there were 77(64.2) subjects who agreed to the statement. 18(15%) subjects continued to disagree to this statement. And the change is statistically significant p value=0.0001. For the statement; son/ daughter can be married to a TB patient, on assessing after two months of treatment, 35(29.2%) subjects neither agreed nor disagreed to this statement and only 6(5%) strongly agreed to it. And the change is statistically significant p value=0.0001. For the statement; a TB patient can share food with others, only 4(3.3%) strongly agreed to it, and on assessing

after 2 months of treatment 13 (10.8%) subjects strongly disagreed. And the change is statistically significant p value=0.0001. To the statement; a TB patient should not smoke, 84(70%) agreed on assessing after 2 months of treatment. On questioning, after 2 months of treatment, only 1(0.8%) disagreed to it. And the change is statistically significant p value=0.0001.

Practice Assessed After 2 Months Of Treatment:

Among the study subjects, only 10(8.4%) discontinued drug intake during 2 months of treatment. 35(38.5%) of subjects followed the method of burying deep under soil without prior disinfection and 26(28.6%) subjects followed flushing in a toilet without disinfection. There are 2(2.1%) of subjects who threw sputum to a far-off place or spit into the sink directly. About 57(47.5%) consulted their doctor once during their 2 months treatment and 59(49.2%) tested their blood only once. 57(62.6%) patients have only tested their sputum once until 2 months of treatment, thrice by 2(1.7%) patients. Table 3 refers to the practice of testing and giving prophylaxis to child less than 6yrs.

Of the study subjects, cough hygiene was present in 77(64.2%) subjects and absent in 43(35.8%). Among the 66(55%) employed subjects, 32(26.7%) took leave from work for a month and 19(15.8%) did not take any leave of absence from work. Among the 43 subjects who had a habit of smoking, 4(9.3%) of them continued the habit even during treatment.

Discussion

In the present study, the mean age of the subjects was 48 ± 16.52 years, around 31.7% belonging to the age group of 31-45years which is in line with the fact that TB affects people in the productive age group.(10) In this study, 44.6% are unemployed but in a Nigeria study done by Oladiya Bila *et al*, there were 14.2% of unemployed people.(11) In this study, 24% were using tobacco but in a study done in Malaysia by Awaisu *et al*, 40.27% were smokers.(12) Considering the source of information, 38.3% of the patients had not received any information at all at the start of treatment. After two months, the health system had disseminated information to 96.7% of patients. This can be compared to a study done in Rajasthan by Jangid *et al* 2.9% of patients did not receive any information at all.(13) Among the study subjects,

13.3% of patients knew that anyone can get the disease but in a study done by Angeline *et al* in Tamil Nadu, 20.7% of participants responded that anybody can have the disease.(14)

Of the study subjects, 38.4% mentioned mode of transmission of TB as through air when a diseased person coughs when on assessing at the start of treatment and the proportion increased to 77.5% on assessment after two months of treatment. On comparing with a study done in Aligarh by Khalil *et al*, 27.3% of subjects mentioned through air as transmission mode of the disease.(15) Regarding communicability of the disease, 91.7% of subjects knew that TB was communicable on assessing after two months of treatment. But in a study done in Delhi by Dzeyei *et al*, 94% knew about the communicability of TB.(16) In this study, 96.7% of subjects knew that TB was curable on taking treatment and only 2.5% of subjects did not whether TB was curable or not on assessing after two months of treatment. In a study done in Sudan by Kenyi *et al*, 94.1% mentioned that TB was curable and 4.9% did not know the curability of the disease.(17) In this study 41.7% knew that smoking was a risk factor of TB and that increased to 83.3% on assessing after two months of treatment. This can be compared with a study done in South Africa by Louwagie *et al*, where 85.4% knew that smoking was a risk factor.(18) 20% of subjects knew gastric irritation as a side effect for TB drugs and 65% of patients did not know about any side effects after 2 months of treatment. This can be compared to a study done in Tanzania by Wandwalo *et al*, 29% knew about the correct side effects of TB drugs.(19)

Regarding attitude towards the need of regular treatment, 78.3% of patients agreed to the need of regular treatment and 19.2% strongly agreed. This can be compared to Gelaw *et al* study in Addis Ababa, where 57.5% were in favour of the treatment regimen.(20) To the statement – TB is a disease which requires regular medical check-up, around 58% of patients agreed to the statement at the start of treatment, and on assessing after two months that increased to 76.7%. To the statement of attitude on son/daughter getting married to a TB patient, 10.8% of patients strongly disagreed and only 5% strongly agreed to it on assessing after two months of treatment. Nevertheless, in a study done by Croft *et al*

in Bangladesh, 88% did not agree to permit their son/daughter to get married to a TB patient.(21)

Regarding drug adherence among the study subjects, 8.4% discontinued this can be compared to a study done in Nigeria by Bello et al, in which 94.6% of patients adhered to treatment and the rest did not.(22) Regarding cough hygiene, 64.2% of patients follow cough hygiene and it was absent in the rest 35.8%. This can be compared to a study done in Maharashtra by Deogaonkar et al, where only 85% of patients followed cough hygiene and 15% did not.(23) In the current study, 32.5% stopped smoking while on treatment but in a study done by Sony et al in Sudan, 86% of patients stopped smoking while on treatment. (24)

Conclusion And Recommendations

A total of 120 patients were included in the study who were interviewed at the beginning of the treatment and after two months of treatment. 25% of subjects had a child of less than six years in their homes. There was a statistically significant changes in the knowledge among patients when assessed at two different intervals. A statistically significant changes in knowledge level was observed in susceptibility of disease, modes of disease transmission, the communicability of disease, and smoking as a risk factor for disease. A statistically significant change in the attitude was found regarding the variables like TB is a disease which requires regular treatment, a disease which requires regular medical check-up, TB patient must follow personal protective measures and a child less than or equal to six years living with a TB. The presence of children less than 6yrs at home along with a TB diagnosed patient may be unfavourable. There were patients in this study who made their children stay afar in the houses of close relatives. Those who were living with children were not told to undergo testing and therefore no prophylaxis was given. This can result in the child getting infected during childhood and likely to develop into disease maybe later in their adult life or anytime when they become immunocompromised. An observation made while data collection was that, almost half of the patients in this study had exposure to a TB diagnosed patient during their childhood/teenage days. Even though there was a significant change within two months of treatment for most variables, there is room for more

improvement in IEC dissemination. Patients are being provided with a sputum disposal kit on diagnosis but they are unaware of the purpose of the disinfectant given along.

The dissemination of information regarding the disease to the patients may be invoked right at the need of a diagnostic technique of TB. The public should be made known about the symptoms of the disease so that they will be knowledgeable enough to seek medical advice when needed. At the point of diagnosis (clinically or microbiologically confirmed TB), the doctor or health staff treating the patient may thoroughly explain various disease aspects. Existing meetings of patients with DOTS providers may be strengthened and such meetings can be taken as opportunities to share patient problems and positive thoughts. Also, these meetings may involve the family members too so that they can be encouraged to become support pillars for the patients. Child to child method can be followed so that through a child, information may reach their families. Conducting a qualitative study would throw light into the thoughts and perceptions of the population especially risk groups

Limitations

Health workers were not interviewed and so the full spectrum of the issues faced could not be listed out. Knowledge, attitude, and practice of health workers were not assessed and so the relation between patients' understanding and health workers cannot be established. Geographical area was confined to one district of the state and so may not be generalized to a bigger population.

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Tables

Table 1: Distribution based on habits of the study subjects.

Habits	Frequency	Percentage
Alcohol	10	8.3
Tobacco	29	24.0
Alcohol + tobacco	14	11.6
No such habits	67	56.1
Total	120	100.0

Table 2: Comparison of knowledge on the communicability of disease

Knowledge on the communicability of disease	At start of treatment n (%)	After two months of treatment n (%)	P value McNemar =31, df=3
Yes	80(66.7)	110(91.7)	0.0001
No	11(9.1)	3(2.5)	
Don't know	29(24.2)	7(5.8)	
Total	120(100.0)	120(100.0)	

Table 3: TB testing and prophylaxis for a child less than six years of age.

Variable		Frequency (N=30)	Percentage
Testing for child	Yes	0	0
	No	30	100.0
Prophylaxis for child	Yes	0	0
	No	30	100.0