

RESEARCH ARTICLE**A CLINICAL STUDY ON THERAPEUTIC MANAGEMENT AND IMPACT OF PATIENT COUNSELING ON TUBERCULOSIS**

V. RAMANARAYANA REDDY*, B.VENKATESWARA RAO¹, A. JAYARAMI REDDY¹,
A.KSHORE BABU¹, G.NAGARJUNA REDDY¹ and K. BHARATHI PRIYA²

¹AM Reddy Memorial College of Pharmacy, Petlurivaripalam, Narasaraopet, Guntur Dt, (A.P), India

² Vel's University, Pallavaram, Chennai, (T.N), India

ABSTRACT

A observational descriptive study was conducted in Sri Venkateswara Ramanarain Ruia Government General Hospital, Tirupathi. For six months to assess the impact of pharmacist provided therapeutic management, patient education on knowledge, attitude and practice (KAP) and patient counseling in tuberculosis patients. 201 patients were taken for the study in pre-intervention and post intervention. Patient knowledge, attitude and practice questionnaire was translated in Telugu. The patients received pharmacist provides patient education regarding drug therapy and life style modifications through the patient information leaflets (PIL) in English and telugu. A significant was observed with the help of knowledge, attitude and practice questionnaire towards the disease. KAP was observed in paired 't' test significant was difference ($P < 0.001$).

INTRODUCTION

Tuberculosis (TB) is a disease that has severely affected communities and nations since times immemorial. The disease has brought untold miseries to generations and even today, when newer modalities for diagnosis and treatment of TB have made the disease curable, people are suffering and dying from the disease. Collaborative approach between patient and pharmacist may improve patient medication adherence behavior and therapeutic outcomes. Role of pharmacist as tuberculosis educator is appreciated worldwide in reducing the risk factors and improving patient knowledge.

The present study is conducted to assess the impact of pharmacist provided patient education on knowledge attitudes, and practices regarding the management of disease and overall improve the patients education and life style modification about the disease. The patients received pharmacist provides patient

education and patient information leaflets to complement verbal counseling.

METHODOLOGY

201 patients from different walks of life (businessmen, students & slum-dwellers) were interrogated with a descriptive study. The study period was October 2009 to 2010. And this study was conducted in Sri Venkateswara Ramanarain Ruia Government General Hospital, Tirupath. The enrollment patient who has been diagnosed as tuberculosis were send to the clinical pharmacist by the doctors. About 201 patients those who where full filling the requirement were included in the study to assess the patient knowledge. Complete demographic details, past and present medical and medication history was obtained in a suitably designed patient profile form. To assess the Knowledge, attitudes, and Practices (KAP) of the patients towards the disease management, a suitably designed, content and

translation validated telugu version of KAP questionnaire was administered on all the enrolled patients at before and after intervention study.

Its risk factors completion and life style modification necessary in tuberculosis patient. The answer know also considered a "YES" only. The answer do not know also was considered "No" only. An intervention based randomized study was designed to evaluated the effect of patient counseling in the study population. On an average 15-20 minutes was spend in each patients depending on their educational level and understanding capability. The statistical software namely SPSS and systat were used for the analysis of the data and Microsoft word and excel had been used to generate graphs, tablets etc. Paired 't' test was carried out to calculate the before and after interventions study. In this study, $P < 0.001$ considered as the statistical significant

Results

. A total of 201 patients were enrolled into the study. Out of them, 201 patients pre-intervention and 201

patients were post-intervention study. Complete demographic details of the patients such as age, sex details, social history and sputum smear AFB are given table-1. And also types of tuberculosis details are given table-2. Gender Vs sputum smear AFB, chest x-ray, type of tuberculosis and HIV details are given table-3. And also category of disease details are given table-4

Measure the knowledge attitude and practice questionnaire

The base line patient knowledge in pre-intervention mean average 31.5 ± 13.59 and post intervention mean average 128.08 ± 34.64 . So increasing the patient knowledge and significance is deference. The $P < 0.001$ is shown in the table-5 significance improved and observed in the post intervention study.

Assessment of knowledge attitude and practice

Gradually improvement the patient knowledge to overall but six questions were heigh significance and six questions were significant.

Table:1 Age Vs sex, social history and sputum smear AFB

Age in years	Sex		Social history		Sputum smear AFB	
	Male	Female	Smokers	Alcohol	Positive	Negative
1-10	2	4	0	0	1	5
11-20	11	8	8	4	9	10
21-30	26	13	22	20	20	19
31-40	33	11	31	29	27	17
41-50	37	8	28	22	21	24
51-60	33	8	26	13	17	24
61-70	4	0	4	0	2	2
71-80	1	1	1	0	0	2
81-90	1	0	0	0	1	1
Total	148 (73.63%)	53 (26.36%)	120 (81.08%)	88 (59.45%)	98 (49%)	103 (51.24%)
Mean±S.D	16.44±15.54	5.88±4.83	13.33±12.40	9.77±10.79	10.88±10.48	11.55±12.28

Table: 2 Age Vs type of disease

Category of disease	CAT-I	CAT-II	CAT-III
Male (n=148)	96 (65%)	37 (25%)	15 (10.13%)
Female (n=53)	41 (77.35%)	4(7.54%)	8 (15.09%)

Table:2 Gender Vs sputum smear AFB, chest x-ray, type of tuberculosis and HIV

Gender	Sputum smear AFB		Chest X-ray		Type of tuberculosis		HIV	
	Positive	Negative	Positive	Negative	Pulmonary	Extra-pulmonary	Positive	Negative
Male (n=148)	75 (50.6%)	73 (49.32%)	25 (16.89%)	123 (83.10%)	123 (78.60%)	29 (67.44%)	17 (11.48%)	131 (88.51%)
Female (n=53)	23 (43.3%)	30 (56.60%)	18 (41.86%)	35 (66.03%)	32 (20.25%)	18 (42%)	8 (15.09%)	45 (85%)

Table No: 12 Gender Vs Category of disease

Age in years	Pulmonary TB	Extra pulmonary TB
1-10	3	3
11-20	15	9
21-30	28	16
31-40	41	4
41-50	39	6
51-60	28	12
61-70	2	2
71-80	1	1
81-90	1	0
total	158 (78.60%)	43 (21.39%)
Mean±SD	17.55±15.76	6.62±5.15

Table: 5 knowledge, attitude and practice assessment before and after intervention
(Assessed based on correct answers)

S.No	Questions	Pre-intervention		Post-intervention		Difference
		No.	%	No	%	
1	Can you name the disease you are suffering from?	16	8	201	100	185**
2	Do you know which part of body is effected?	9	4.4	190	94.52	192**
3	Do you know what is the causative organism of Tuberculosis?	2	0.1	10	5	8*
4	Do you know what are the symptoms of Tuberculosis?	84	41.7	160	79.60	76*
5	Do you know about the importance of taking regular treatment of Tuberculosis?	31	15.4	67	33.33	36*
6	Do you know how long medication for TB should be taken?	37	18.4	201	100	164**
7	What to do if any side effects develop?	33	16.4	65	32.33	32*
8	Do you how to prevent?	23	11.4	60	29.85	37*
9	Do you know how to take the medication?	10	5	201	100	191**
10	Do you know which color box is given to you?	0	0	55	37.36	55*
11	Do you know the precautions to be take during coughing?	82	40.79	148	73.63	102**
12	Are you taking medications in the presence of health volunteers?	51	25.37	168	83.58	117**
Mean±SD		31.5±13.59		128.08±34.64		99.58
t-value				4.86		
Degree of freedom				11		
P-value				P<0.001		

** Higher significance * significance

Figure:1 Bar diagram of age Vs type of tuberculosis

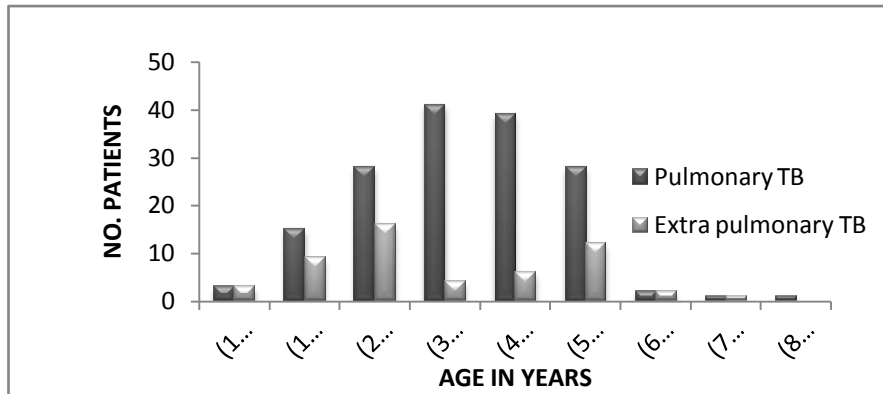


Figure:2 Bar diagram of gender Vs category of disease

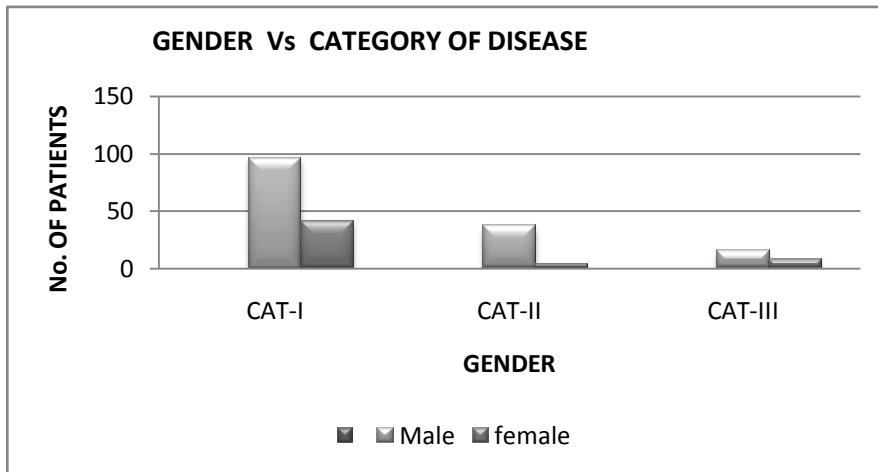


Figure: 3. Bar diagram of knowledge, attitude and practice assessment before and after intervention.

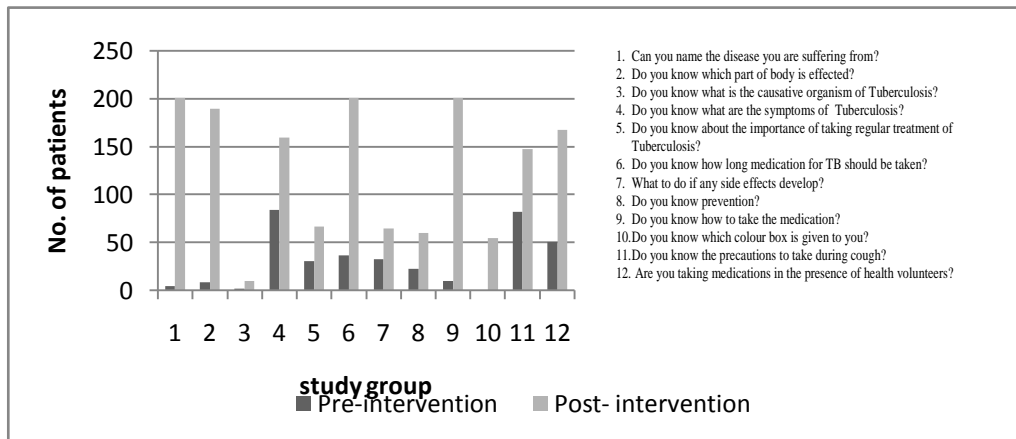
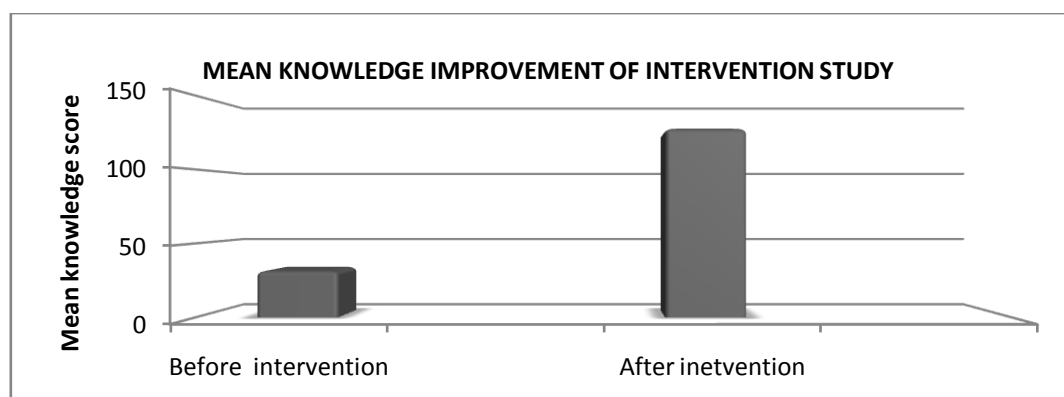


Figure: 4 Bar diagram showing mean knowledge improvement intervention study.



DISCUSSION

The observational descriptive studies suggest that counseling has shown positive impact on health and decreased the mortality and morbidity. The demographic details of patients enrolled into the study shows that majority of patients are males (73.63%) and visit the hospital on their own. 120 (81.08%) were smokers, 88 (59.45%) were alcoholic. 98 (49%) were males and 53 females (51.24%) were positive the sputum smear AFB, 158 (49%) were males 43 (21.39%) females had pulmonary tuberculosis. Out of 148 males, CAT-I were 96 in number (65%), CAT-II were 37 in number (25%), CAT-III were 15 in number (10.13%). In females CAT-I were 41 in number (77.35%) CAT-II were 4 in number (7.54%), CAT-III were 8 were in number (15.09%).

The total effect was very large with effect size is 4.86 and $P < 0.001$. It was found that the mean knowledge increase from 31.5 to 128.08 in the intervention study.

Knowledge Attitude and Practice

The KAP questionnaire that consisted of questions regarding the tuberculosis, its causes, symptoms and life style changes have given lot of information on how the patients live with the disease and how well interventions can be done to achieve better

therapeutic outcome. In this study, there was improvement in knowledge of the patients regarding basic concepts of the disease like accurate tests for monitoring the tuberculosis control at least in a one month, two months according RNTCP. Some patients in post intervention have been provoked in knowing certain facts like affected during tuberculosis importance checking the sputum test. This is the reason why there is slight improvement in knowledge of post-intervention patients after the study even though no patient education is provided.

CONCLUSION

Patient education and medication counseling are the management of disease like tuberculosis where the base line knowledge about the disease is low among the people. 201 patients were counseled regarding their knowledge, attitude and practice on management of tuberculosis. The number of patients who were counseled showed very large effect after counseling. Patient counseling produced significant improvement in patients knowledge, attitude and practice score regarding the management of tuberculosis and thereby better therapeutic out come. This shows that counseling does very important role in tuberculosis. The clinical pharmacist can play a major role in improving patients knowledge and adherence by patient education and by developing education materials like patient information leafless

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CORRESPONDING AUTHOR ADDRESS

pharmarams@gmail.com