

Original Article

A PROSPECTIVE INTERVENTIONAL STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) TOWARDS TUBERCULOSIS AMONG PATIENTS WITH KOCH'S DISEASE

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ABSTRACT

Objective: To evaluate the knowledge, attitude and practice (KAP) of tuberculosis patients and to provide structured patient education through patient counselling on disease, drugs and lifestyle modifications in tuberculosis patients.

Methods: All enrolled patient received structured & standard education regarding the disease tuberculosis, medication, diet & lifestyle modification after the preliminary assessment of KAP towards TB. Changes in the knowledge, attitude, and practice in the post-intervention phase were assessed and analyzed statistically.

Results: Change in knowledge score of the patients before and after counselling was observed as 37.74% to 79.06% where the mean change in percentage is 41.32%. The change in the attitude of the patients before and after counselling was found to be 21.61%. Counseling towards practice before and after counseling was increased from 63.18% to 82.12% with a mean change of 18.94%.

Conclusion: Change in KAP due to educating the patients would help in the increased adherence to antitubercular therapy (ATT) in the patients with tuberculosis; thereby resistance towards the drugs can be reduced.

Keywords: Tuberculosis, Koch's disease, Compliance, KAP study.

INTRODUCTION

Tuberculosis (TB), a globally widespread, and in many cases fatal, infectious disease caused by various strains of mycobacterium, usually *Mycobacterium tuberculosis* [1]. Tuberculosis is classified as one of the granulomatous inflammatory diseases. Macrophages, T lymphocytes, B lymphocytes, and fibroblasts aggregate to form granulomas, with lymphocytes surrounding the infected macrophages. Effective TB therapy is hindered by restricted drug entry into the mycobacterial cell wall that possesses an unusual structure and chemical composition and thereby makes many antibiotics ineffective [2]. The risk of reactivation increases with immune-suppression, such as that caused by infection with Human Immunodeficiency Virus (HIV). In people co-infected with *M. tuberculosis* and HIV, the risk of reactivation increases to 10% per year. Studies using DNA fingerprinting of *M. tuberculosis* strains have shown reinfection contributes more substantially to recurrent TB than previously thought, with estimates that it might account for more than 50% of reactivated cases in areas where TB is common [3].

Subramanian *Tet al.* did a study on Knowledge and Misconception of Pulmonary Tuberculosis at Dots Centre, Urban Meerut and found that poor knowledge and misconception concerning TB was quite concern in the patients. He mentioned that unless the TB patients are educated related to causation of TB, mode of spread and methods of prevention, tuberculosis control program will be less effective [4]. Mukhtar A. Solliman *et al.* assessed the Knowledge towards Tuberculosis among General Population in North East Libya and reported that knowledge towards TB within the population was poor. The author also recommends structured educational programs to be developed for community members to promote awareness towards TB [5].

The main aim of this study was to assess the impact of patient counselling on the knowledge, attitude and practice towards tuberculosis in patients with Koch's disease. The key objective was to evaluate the knowledge, attitude and practice of tuberculosis patients and to provide structured patient education through patient counselling on disease, drugs and lifestyle modifications for tuberculosis patients. This is a study that was carried out to

understand the patients' knowledge, attitude and practice towards the antitubercular medication therapy, disease nature, etc. This could help in identifying the lacunae in education for patients towards TB and how pharmacist-provided optimized counselling helps in medication adherence and thereby therapeutic success.

MATERIALS AND METHODS

Study population

The sample size was calculated with a margin of error of 5%, a confidence level of 95% and a level of distribution of 50 % amongst an average population of 200 (based on a primary survey at the hospital). The calculations showed a recommended sample size to be 132 individuals. The study proposal was approved by the Institutional Ethics Committee (IEC/DOPI/2015/03). It was carried out for a period of six months in the chest & TB outpatient department of a tertiary care hospital.

Selection and withdrawal of subjects

Those patients who received antitubercular therapy and had the willingness to answer the survey questionnaire were invited for participation in the study. Childbearing women, children (age < 18 y), mentally incompetent patients, deaf and dumb patients and patients under last month of their treatment were excluded from the study.

Study instrument

The questionnaire was validated to check for its accuracy with the help of a pilot study (sample size of 10 patients). Test and retest method was done with a Cron Bach alpha score of 0.8. Patient demographics, educational background, and social habits, socio-economic conditions, past medical history, past medication history were collected using structured data entry form designed for this study. All the study participants were assessed for their understanding, thoughts & practice towards anti-tubercular therapy using suitable questionnaire. All enrolled patient received structured & standard education regarding the disease tuberculosis, medication, diet & lifestyle modification. Changes in the knowledge, attitude and practice in these patients after the Pharmacist's intervention were assessed statistically [6].

The questionnaire included questions to assess the patient's knowledge on the disease, its cause, epidemiology, transmission, symptoms, complications, treatment options, etc.

The questions to assess attitude included patient's attitude towards prevention, curability, thoughts on risk factors such as tobacco smoking, social isolation, vaccination, etc [7]. The questions to assess Practice included patient's practice of personal cleanliness, time and routes of administration, diet patterns, follow up etc.

Statistical analysis

Statistical analysis was done using prism-graphpadv6.0. Student t test was done using SPSS statistics and observed the mean changes between the changes in KAP before and after patient education and calculated with $p < 0.05$.

RESULTS

The following results were obtained from this study.

Table 1: Gender distribution

Gender	No. of patients N=132	% of patients
Male	81	61%
Female	51	39%
Total	132	100%

Out of 132 tuberculosis patients included in the study 81(61%) were male and 51(39%) were female.

Table 2: Age distribution

Age	No. of patients N=132	% of patients
18-20	8	6%
21-30	22	16%
31-40	26	20%
41-50	20	15%
51-60	29	22%
61-70	16	12%
>70	11	8%

The mean age of the study population was 45 ± 16 y. Among the 132 patients, most of them 26(20%)-20(22%) were in the age ranging between 31-40 and 51-60 respectively.

Table 3: Social habits distribution

Social habits	No. of patients	% of patients
Smoking	74	56%
Alcohol	63	48%
Total	117	89%

It was found that 89% of the patients were smokers, and 48% were alcoholics.

Table 4: Comorbidity distribution

Comorbidity	No. of patients N=132	% of patients
DM	29	22%
SHT	6	5%
DM,SHT	17	13%
TOTAL	52	39%

Around 52(39%) patients had a comorbid condition in which 29(22%) had diabetes, 6(5%) were hypertensive and 17(13%) were both diabetic as well as hypertensive.

Table 5: Tuberculosis classification distribution

TB classification	No. of patients N=132	% of patients
Pulmonary tuberculosis	116	88%
Extra-pulmonary tuberculosis	16	12%

Around 116(88%) were affected with pulmonary tuberculosis, followed by 16(12%) with extra-pulmonary tuberculosis patients among the 132 patients.

Table 6: Mean KAP score pre and post intervention

Study parameter	Pre-intervention	Post intervention	Change in Percentage
Knowledge	4.15(± 0.70)	8.90(± 0.70)	41.32%
Attitude	8.41(± 1.41)	11.7(± 0.70)	21.61%
Practice	6.31(± 2.12)	8.21(± 1.41)	18.94%

Changes in KAP scoring between PRE and POST intervention is shown. Accordingly the mean of knowledge was 4.15 ± 0.70 & 8.90 ± 0.70 , mean of attitude was found to be 8.41 ± 1.41 & 11.70 ± 0.70 and the mean of practice was observed as 6.31 ± 2.12 & 8.21 ± 1.41 before and after counselling respectively.

Table 7: Kap score amongst patient before and after counselling

KAP	Before				After			
	Poor		Good		Poor		Good	
	N=132	%	N=132	%	N=132	%	N=132	%
Knowledge	118	89.39	14	10.60	0	0	132	100
Attitude	50	37.87	82	62.12	0	0	132	100
Practice	44	33.33	88	66.67	0	0	132	100

Before counselling the number of patients whose score was poor in knowledge, attitude and practice were 118, 50 and 44 and who scored good were 14,82 and 88 respectively. No poor score in knowledge, attitude and practice were found after counselling

Table 8: Changes in good score of kap after intervention

Study parameter	BI good score	% BI scores	AI good scores	% AI scores
Knowledge	14	10.60	132	100
Attitude	82	62.12	132	100
Practice	88	66.67	132	100

Good score of knowledge, attitude and practice changed from 10.60%, 62.12% and 66.67% to 100% in TB patients post-intervention.

Table 9: Knowledge, attitude and practice of patients before and after counselling.

KAP	Before counselling(BC)	After counseling(AC)	Mean
Knowledge	37.74%	79.06%	41.32%
Attitude	56.11%	77.72%	21.61%
Practice	63.18%	82.12%	18.94%

Change in knowledge score of the patients before and after counselling was observed as 37.74% to 79.06% where the mean change in percentage is 41.32%. The change in the attitude of the patients before and after counselling was found from 56.11% to 77.72% with mean change of 21.61% respectively. Counseling towards practice before and after counseling was increased from 63.18% to 82.12% with mean change of 18.94%.

Table 10: Changes in average kap score before counselling and after counselling

KAP Score	BC	AC
	18.89	28.81

The average KAP score of the study population in the pre and post intervention phase was found to increase from 18.89% to 28.8%.

DISCUSSION

Among the 132 patients, male (61%) were found to be more, which is similar to that reported by Haasnoot P *et al.* [8]. Marinac J *Cet al.* mentioned that patients between 21-40 y of age are highly affected with TB, which is in contrast to the present study results, where 20% & 22% of the patients were between 31-40 y & 51-60 y of age correspondingly [9]. In the present study, 56% of the participants were smokers and 48% were alcoholics. About 29 (22%) TB patients had diabetes as comorbidity, 6(5%) had hypertension, and 17 (13%) had both diabetes and hypertension. Amid the study population, about 116(88%) patients suffered from pulmonary tuberculosis and 16 (12%) by extrapulmonary tuberculosis, which is similar to that reported by Singh M M *et al.* [10].

In the current study only 10.60%, 62.12% and 66.67% has a good score of knowledge, attitude and practice in the pre-interventional phase whereas 100% good score of KAP after counselling which is similar to the results of Granje *et al.* [11]. The average KAP score before counselling was 18.89 and the average KAP score after counselling was 28.81. There seemed to be a significant change in the patient knowledge, attitude and practice towards tuberculosis over time after counselling, which is also accepted for the study reported by Purohit SD *et al.* [12].

A paired t test was done to analyse the difference in KAP before and after counselling which showed a significant difference ($p < 0.0001$) between these 2 scores. This confirms that knowledge, attitude and practice improve after structured patient counselling.

CONCLUSION

In the current study, knowledge, attitude and practice of patients have been improved after patient counselling. Change in the

knowledge, attitude and practice towards tuberculosis due to structured education by the pharmacist would help in increasing medication adherence of the antitubercular drugs; thereby resistance towards the drugs can be minimized. This will further help in preventing the disease transmission as well.

CONFLICT OF INTERESTS

Declare none

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