

Role of Education on Perceptions, Social Consequences and Compliance among Tuberculous Patients: A Study Conducted in Teaching Hospitals, Lahore

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Abstract

Objectives: To see the affect of education on perceptions, social consequences of tuberculosis and compliance on treatment among patients.

Study Design: A descriptive cross sectional study.

Setting and Duration: This study was conducted in five teaching hospitals, in public sector in Lahore, namely Mayo hospital, Sir Ganga Ram hospital, Services hospital, General hospital, Jinnah hospital, from July 2008 to May 2009.

Methodology: Four hundred T.B patients aged 15 years and above registered under TB DOTS in OPD were selected by convenience sampling technique for interview. A semi-structured questionnaire was used to collect data. Closed – ended questions with multiple choices were used; with a last choice allowing the participants to give his/her own opinion as required, if it was different from the choices listed for the question.

Results: Educated patients had better knowledge about the etiology (75.5%), transmission of disease (59.4%), period of communicability (71.4%), curability of disease (67.3%), DOTS and the standard long course treatment regimen for TB (58.2%), consequences of incomplete treatment (57.9%). Moreover educated patients had better compliance (60.2%) on treatment.

Conclusion: Education has deep impact on the perceptions, social pattern and compliance of the patients on treatment.

Key words: TB DOTS, TB Perceptions, TB social consequences, Compliance on TB treatment.

Introduction

The problem of TB is one of the major infectious diseases. It is associated with illiteracy, poverty, poor knowledge, poor health services and economic handicaps. Tuberculosis is an important current issue. According to WHO evaluation ten million people are infected every year and more than three million die every year because of TB.¹ Overall, one – third of the world's population is infected with the *Mycobacterium tuberculosis* at present. Approximately 5 – 10% of individual who are infected with *Mycobacterium* develop active disease at some time during their life.² Most usual mode of transmission of TB is by air,³ and transmission is influenced by various factors such as poor quality of life, poor housing ,overcrowding under nutrition etc, which depend on the case, source, the contact and environment. Among these factors, the most important are the bacteriological status of the patient, the immune status of the contacts, proximity and amount of exposure to the patient.⁴

Situation in Pakistan is not different from that in other developing countries. According to WHO, 297,108 cases and 47,587 deaths occurred in Pakistan

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in year 2007. Prevalence rate of 223 per 100,000 population, New TB slear positive cases 181 per 100,000 population.⁵

Tuberculosis is not only a health problem. It is a social, economic, and political disease. The disease manifests itself wherever there is neglect exploitation, illiteracy and extensive violation of human rights. The knowledge, attitude and behavior of any society control the outcome of any program. Success and failure of TB control program also depends on the knowledge, attitude and behavior of patients, their families and community to a large extent. In my present study, it is intended to correlate education with perceptions and some of the social factors, as they currently exist. By incorporating the results of this study, it may modify the therapy approach. This will help in the final reduction of the TB scourge.

Methodology

This was a descriptive cross sectional study conducted from July 2008 to May 2009. Four hundred (400) T.B patients aged 15 years and above registered under TB DOTS in OPD in five teaching hospitals, namely Mayo hospital, Sir Ganga Ram hospital, Services hospital, General hospital, Jinnah hospital in Lahore city in public sector where TB unit is present, were selected by convenience sampling technique for interview as follows.

Sample size was calculated using Epi-info software version 3.5.1., Expected frequency of social factors in non-compliance in Pakistan was 9% and the worst acceptable was 6.5%. At confidence level of 95% sample size was 402, and it was rounded to 400 for study. Patients who refused to participate and with co-morbid conditions were excluded from the study. A semi structured questionnaire was used to collect data.

Closed – ended questions with multiple choices were used, with a last choice allowing the participants to give his / her own opinion as required, if it was different from the choices listed for the question. Questionnaire was translated into Urdu for the purpose of this study and was retranslated for checking the accuracy. Collected data was entered into SPSS software version 14. In analysis; frequency distribution and percentages were calculated. The contents and thematic analysis approach was used to analyze qualitative data. The variables obtained were demographic which were described as simple statistics giving mean and standard deviation for age. The outcome variables were listed as frequencies and proportions and the frequencies were tested for statistical significance and chi-square test was applied on qualitative outcome and p-value was calculated. A p-value of 0.05 or less was taken as significant.

Results

On analysis it was found that out of 400 patients, the most frequent age group was less than 20 accounting for the 35.3% and next frequent age group range from 21 – 30 accounting for the 26.5% of total. Meaning thereby that younger representation was more among patients. Educated patients and patients with no formal schooling, both perceived tuberculosis as serious disease. There was no effect of patient education on “Perception about the nature of their disease” Chi square value was = 6.677, df = 4, and p = 0.154 (Table 2). Education was not significantly associated with perception of the patients about the nature of their disease. Educated patients had better knowledge about the etiology of the disease, period of communicability, curability of disease, DOTS and the standard long course treatment regimen for TB, consequences of incom-

Sr. No.	Name of Teaching Institution	Estimated Annual Cases	Sample Drawn
			TB Patients
1.	Mayo Hospital Lahore	500	100
2.	Sir Ganga Ram Hospital Lahore	500	100
3.	Services Hospital Lahore	300	60
4.	General Hospital Lahore	500	100
5.	Jinnah Hospital Lahore	200	40
	Total	2000	400

plete treatment, and educated patients also had better compliance. Education was significantly associated

knowledge of the patients about all these aspects of the disease.

Table 1: Characteristics of Respondents Interviewed.

Characteristics		Patients		
		Male (n = 204)	Female (n = 196)	Total (n = 400)
Age	Less than 20	59 (28.9%)	82 (41.8%)	141 (35.3%)
	21 to 30	59 (28.9%)	47 (24.0%)	106 (26.5%)
	31 to 40	24 (11.8%)	28 (14.3%)	52 (13%)
	41 to 50	23 (11.3%)	13 (6.6%)	36 (9%)
	51 to 60	21 (10.3%)	18 (9.2%)	39 (9.8%)
	61 and above	18 (8.8%)	8 (4.1%)	26 (6.5%)
Marital status	Currently Married	115 (56.4%)	82 (41.8%)	197 (49.3%)
	Unmarried	76 (37.3%)	99 (50.5%)	175 (43.8%)
	Widow/ Widower	5 (2.5%)	14 (7.1%)	19 (4.7%)
	Divorced	-	1 (0.5%)	1 (0.3%)
	Separation	8 (3.9%)	-	8 (2.0%)
Occupation	Farmer	29 (14.2%)	6 (3.1%)	35 (8.8%)
	Govt. servant	13 (6.4%)	8 (4.1%)	21 (5.3%)
	Private business / Private employee	80 (39.2%)	7 (3.5%)	87 (21.8%)
	Student	19 (9.3%)	41 (0.9%)	60 (15.0%)
	Pensioner	9 (4.4%)	-	9 (2.3%)
	Unemployed	26 (12.7%)	1 (0.5%)	27 (6.8%)
	Housewife	-	136 (69.3%)	136 (34.0%)
	Laborer	24 (11.8%)	1 (0.5%)	25 (6.3%)
Education	No formal schooling	94 (46.1%)	89 (45.4%)	183 (45.8%)
	Secondary school completed	75 (36.8%)	79 (40.3%)	154 (38.5%)
	Above metric	35 (17.2%)	28 (14.3%)	63 (15.8%)

Effect of Education on Perception and Social Consequences

Table 2: Effect of Patient education on “Perception of the patients about the nature of their disease”.

Education	Perception of the patients about the nature of their disease			
	A serious Problem	Common Disease	Don't Know	Total
No formal schooling	140 (44.6%)	25 (42.4%)	18 (66.7%)	183 (45.8%)
Secondary school completed	121 (38.5%)	27 (45.8%)	6 (22.2%)	154 (38.5%)
Above metric	53 (16.9%)	7 (11.9%)	3 (11.1%)	63 (15.7%)
Total	314	59	27	400

Chi square = 6.677, df=4, p = 0.154

Table 3: Effect of education on “knowledge of the respondents about the etiology of the disease”.

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	40 (24.3%)	143 (60.9%)	183 (45.8%)
Secondary school completed	74 (44.8%)	80 (34.0%)	154 (38.5%)
Above metric	51 (30.9%)	12 (5.1%)	63 (15.7%)
Total	165	235	400

Patients: Chi square = 72.314,
df=2, p < 0.001

Table 4: Effect of education on “Knowledge of the respondent about the transmission of disease.

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	131 (40.5%)	52 (67.5%)	183 (45.8%)
Secondary school completed / Above metric	192 (59.4%)	25 (32.5%)	217 (54.3%)
Total	323	77	400

Patients: Chi square = 18.23, df = 1,
p < 0.001

Table 5: Effect of education on “Knowledge of the respondents that TB is curable disease.

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	90 (32.7%)	93 (74.4)	183 (45.8%)
Secondary school completed / Above metric	185 (67.3%)	32 (25.6%)	217 (54.3%)
Total	275	125	400

Patients: Chi square = 60.13, df = 1,
p = < 0.001

Table 6: Effect of education on “Knowledge of the respondents about the period of communicability, if treated.

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	8(28.6%)	175(47.0%)	183(45.8%)
Secondary school completed	8(28.6%)	146(39.3%)	154(38.5%)
Above metric	12(42.8%)	51(13.7%)	63(15.7%)
Total	28	372	400

Patients: Chi square = 16.76, df=2,
p<0.001

Discussion

Educated patients had statistically significant better knowledge about the etiology (Table 3), transmission

of disease (Table 4), curability of disease (Table 5), period of communicability (Table 6) DOTS and the standard long course treatment regimen for TB (Table 7), consequences of incomplete treatment (Table 8),

Table 7: Effect of education on “knowledge of the respondents about DOTS and the standard long course treatment regimen for TB.

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	145 (41.8%)	38 (71.7%)	183 (45.8%)
Secondary school completed / Above metric	202 (58.2%)	15 (28.3%)	217 (54.3%)
Total	347	53	400

Patients: Chi square = 16.57, df = 1, p < 0.001

Table 8: Effect of education on “Knowledge of the respondents about the untoward consequences of incomplete treatment”

Education	Knowledge		
	Patients		
	Yes	No	Total
No formal schooling	134 (42.1%)	49 (59.8%)	183 (45.8%)
Secondary school completed / Above metric	184 (57.9%)	33 (42.2%)	217 (54.3%)
Total	318	82	400

Patients: Chi square = 8.15, df = 1, p = 0.004

Table 9: Effect of education on “Compliance on treatment by the patients.

Education	Compliance	
	Yes	No
No formal schooling	101 (39.8%)	82 (56.1%)
Secondary school completed	99 (39.0%)	55 (37.7%)
Above metric	54 (21.2%)	9 (6.2%)
Total	254	146

Chi square = 18.905, df = 2, p = < 0.001

and also had better compliance (Table 9). This finding is consistent with the study carried out at an urban university teaching hospital in Malaysia⁶ that educational background was an important determinant of a patients level of knowledge about tuberculosis .Patients with tertiary education had better knowledge than the others. This is also consistent with the study conducted in India⁷ where women who suffer from disproportionate poverty, low social status, less education have an impact on TB control effort. Our findings about etiology, mode of transmission are concomitant with the study conducted in five urban communities in Metro Manila⁸ to investigate general knowledge about tuberculosis and intended health-seeking behavior for TB symptoms among the general population, where 3970 subjects were interviewed. Subjects with a college degree scored significantly higher in general knowledge T.B than others. Only 24.8% of those inter-

views knew that T.B is due to germs. Knowledge that a germ is the cause of T.B showed a significant correlation with college level of education (P < 0.0001). 55.3% indicator normal breathing as the main mode of transmission of T.B, although only 21.4% indicated dissemination of droplets during coughing as the disease vehicle. College level of education showed significant correlation with knowledge of coughing as a mode of transmission (P = 0.000002). It was concluded that knowledge about T.B among the general urban population of Metro Manila was low and was determine by level of education rather than age, sex, income, occupation or place of residency.

Conclusion

It was concluded that the education have deep impact

on the perceptions, social pattern and compliance of the patients on TB treatment. So, better education leads to better compliance for prevention and treatment of any disease.

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