



CROSS SECTIONAL COMPARATIVE STUDY OF AWARENESS OF BCG VACCINE AND TUBERCULOSIS AMONG URBAN AND RURAL POPULATION

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ABSTRACT

The cross sectional comparative study was aimed at assessing the awareness BCG Vaccine and Spread of tuberculosis among Urban and Rural Population. AIM:-1. To Study the awareness of BCG Vaccine among urban and rural study population and compare between urban and rural study population. 2. To study the knowledge of spread of tuberculosis and compare among Urban and Rural Population. 200 odd patients from Urban and Rural area were included. 87 participants out of 200 were of the opinion that BCG gives complete protection. Out of which, 74.72% participants were from urban and 25.28% were from rural area. 79 participants were in the opinion of partial protection. Out of which, 62.02% (49) were rural participants and 37.98% (30) were urban participants. Regarding knowledge of tuberculosis, misconception was seen more or less in both the population. It is a need of time to increase awareness of knowledge of tuberculosis.

KEYWORDS : BCG Vaccine, spread of tuberculosis, rural population, urban population

INTRODUCTION

Tuberculosis is one of the major causes of morbidity and mortality in India. Lack of knowledge and awareness regarding the disease among general population is the major concern of worry. We conducted a study about the knowledge of the disease including need of giving BCG vaccination among urban and rural population and tried to compare the knowledge. Such comparative study among rural and urban population regarding knowledge of tuberculosis was never done before.

. AIM:-

1. To Study the awareness of BCG Vaccine among urban and rural study population and compare between urban and rural study population.
2. To study the knowledge of spread of tuberculosis and compare it among urban and rural study population

METHODOLOGY

The cross sectional study was conducted amongst urban and rural population.

Total of 200 patients and the relatives accompanying them, from Urban and Rural Health Centres were included in the study. The nature of study was explained and informed consent was taken.

Inclusion criteria:

1. All patients attending OPD in UHC and PHC and relatives accompanying them.
2. Participant who gave the consent for the study.

Exclusion criteria:

1. Participants who did not give consent
2. Patients having active TB as well as history of TB.

A pretested, validated questionnaire was prepared. It consists of knowledge about BCG vaccine and general knowledge about tuberculosis. The data was analyzed using Microsoft excel spread sheet. Each participant was approached individually and assured of confidentiality.

Results and Discussion

In our study, we selected 100 participants each from rural and urban area for knowledge of tuberculosis.

Demographic Data:

We found that total 54 participants were from 20 to 29 years age group. Out of which 51.85% (28) were from rural area and 48.14% (26) were from urban area.

In the age group of 30-39 years, total 53 participants were included in the study. Out of which, 41.50% (22) were from rural area and 58.50% (31) were from urban area. The sample size in rural (PHC) consisted of 59.82% females and 36.14% males. Whereas urban (UHC) consisted of 40.18% females and 63.86% males.

The participants were of various occupations with maximum consisting of housewives (55.55%) in urban, and skilled workers (60%) in rural.

Table – 1: BCG Vaccination and Tuberculosis

BCG Vaccination ensure against TB infection	Rural		Urban		Total		Chi square Test	P value	Significant at 5% level
	No.	%	No.	%	No.	%			
Complete Protection	22	25.28	65	74.72	87	100	42.764	<0.001	Yes
No protection	29	85.29	5	14.71	34	100			
Partial protection	49	62.02	30	37.98	79	100			
Total	100		100		200				

In reference to efficacy of BCG vaccination, 87 participants out of 200, were of the opinion of complete protection. Out of which, 74.72% participants were from urban and 25.28% were from rural area. It shows that the awareness regarding the disease is quite low.

34 participants were of the opinion that BCG does not provide protection with more of them, that is, 85.29% (29) from rural area than in urban 14.71% (5).

79 participants were in the opinion of partial protection. Out of which, 62.02% (49) were rural participants and 37.98% (30) were urban participants. 74.72% of urban population (with awareness being more in urban than rural) thought that BCG

vaccination gave complete immunization against TB thus proving that the awareness regarding the disease is quite low. Chi square implies statistically significant difference regarding knowledge of complete protection by BCG vaccination against TB among rural and urban population where the correct knowledge was more in urban study population by 49.44 %.

A Chingleput trial of South India suggests high estimate of efficacy for infant BCG vaccine against severe primary disease.¹ Michelsen et al also found usefulness of BCG vaccine in preventing complications of tuberculosis.²

Table 2: General knowledge of TB spread

Sr. General No. knowledge of TB spread		Opinion (Yes)						Chi square Test	P-value	Significant at 5% level
		Rural		Urban		Total				
		NO.	%	NO.	%	NO.	%			
1	Physical contact	52	61.90	32	38.10	84	100	8.210	0.004	Yes
2	Covering Mouth during cough	63	44.36	79	55.64	142	100	6.217	0.013	Yes
3	Chronic cough more than 15days	70	52.23	64	47.77	134	100	0.814	0.367	No
4	Communicable Disease	70	46.97	79	53.03	149	100	2.132	0.144	No
5	Stop treatment after symptomatic relief	52	43.69	67	56.31	119	100	4.669	0.031	Yes
6	Cigarette , Pan , Gutka cause of TB	68	76.40	21	23.6	89	100	44.721	<0.001	Yes
7	TB treatment free of cost in Govt. hospital	78	49.68	79	50.32	157	100	0.030	0.863	No
8	TB lead to cancer	45	47.87	49	52.13	94	100	0.321	0.571	No
9	HIV patient should test for TB	55	60.43	36	39.57	91	100	7.279	0.007	Yes
10	TB major cause of death	65	52	60	48	125	100	0.533	0.465	No
11	TB can be prevented	82	50.93	79	49.07	161	100	0.287	0.592	No

Compilation of awareness about general knowledge of tuberculosis spread in urban and rural population shows the following results.

1. Out of 200, 84 participants thought that transmission of TB occurs by just physical contact. Out of which, 61.90%(52)participants were from Rural and 38.1%(32) were from Urban population.

44.36%(63)participants in Rural as compared to 55.64%(79) in Urban are aware of correct practice of covering mouth while coughing. This goes to prove that people are aware of mode of spread of TB through mass media and other forms.

2. Awareness was more in Rural than Urban by 4.46% for getting tested for TB for cough more than 15 days.

Majority of people are aware in urban (53.03%participants) than in rural (46.97%participants) of TB being a highly communicable disease. In spite of being one of the most common infectious disease in India, awareness of knowledge of tuberculosis is very less.

3. In spite of that, 56.31% (67) participants in Urban compared to 43.69% (52)in Rural are of the opinion that a patient should stop the treatment after symptomatic relief.

4. 23.6% urban participants and 76.40% rural participants were aware that consumption of Cigarette, Pan, Gutka causes tuberculosis.

A similar study conducted by Al salem et al among students reported a lesser awareness in this regard.³

5. 49.68% rural participants and 50.32% urban participants were aware that patients get tuberculosis treatment free of cost in Government Hospitals showing half of the study population was unaware of the fact.

6. 47.87% participants in Rural as compared to 52.13% in Urban were of the opinion of TB leading to cancer. According to Sung's research published in journal of thoracic oncology, it was found that the incidence of lung cancers was approximately 11-fold higher in the cohort of patients with tuberculosis than non-tuberculosis subjects⁴

Awareness was more among rural participants (60.43%) than urban participants (39.57%) for getting tested for TB in a patient with HIV by 20.86%.

According to WHO, Globally, in 2016, 55% of HIV patients had been tested positive for TB as well. Only 24.6% of TB patients were HIV un-infected. In India in 2016, 2.1 million were positive for HIV-TB⁵

9. Regarding awareness of TB being a major cause of death, rural participants (52%) were slightly more aware (4%) as compared to urban participants (48%).

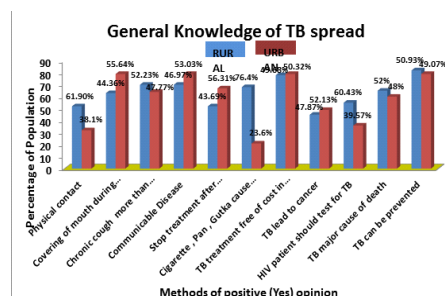
Sunil et al conducted a survey and found 32% of patients succumbed to the disease.⁶

In 2016 a WHO reported a death of 423000 people due to TB but the same statistics showed a 12% decline in 2017.^{7,8}

10. Awareness about TB being a preventable disease is more in Rural (50.93%participants) than Urban (49.07%participants). This shows that this count can be increased and the burden of TB can be reduced if awareness is created amongst the masses.

A similar study by Hossain et al in Bangladesh reported a higher knowledge of 90% in this regard.⁹

Graph 3: General knowledge regarding TB spread



Statistically significant data :

1. Chi square test implies significant difference regarding awareness of TB spread by physical contact which is more in rural population by 23.8%

2. Chi square test implies significant difference regarding awareness in prevention of TB spread by covering of mouth more in urban population by 11.28%

3. Chi square test implies significant difference regarding awareness of stoppage of treatment after symptomatic relief more in urban population by 12.62%

4. Chi square test implies significant difference regarding awareness of cigarette, pan and gutka as being causative factor for TB more in rural population by 52.8%

5. Chi square test implies significant difference regarding awareness of HIV patient getting tested for TB more in rural population by 20.86%.

CONCLUSION

The burden of tuberculosis is high in developing countries and India happens to be one of the significant of the world's TB burden. This burden can be decreased by increasing awareness among the population.

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