

## Perception about BCG vaccination and tuberculosis among urban mothers

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### Abstract

**Aim:** To identify perception about BCG vaccination and Tuberculosis awareness among urban mothers. Methodology: A cross sectional study was carried out among mothers residing in urban areas through health camps to know awareness about schedule of BCG vaccination, purpose of giving it and also find out awareness about Tuberculosis disease. Data was collected from August 2016 to January 2017 using a standard semi-structured questionnaire. Chi-square test was utilized to find the factors which are associated with students' knowledge about TB

**Results:** Among 241 study participants, main source of vaccine information was health department [n=127, 52.7%] were aware of side effects of BCG vaccination [n=219, 90.9%]. All the participants had heard about Tuberculosis disease [n=241, 100%], majority knew that it was a contagious [n=236, 97.9%] and mode of transmission [n= 199, 82.6%].

**Conclusion:** Health workers continue to be main source of information for BCG vaccination and Tuberculosis. Awareness has to be improved regarding transmission of TB and prevention of TB meningitis through BCG vaccination.

**Keywords:** BCG, TB, Perception, Mothers, Vaccination.

### Introduction

The Indian version of WHO's Expanded Programme on Immunization (EPI) to protect all children was launched on November 19, 1985 as Universal Immunization Programme. The National Health Policy aimed at achieving universal immunization coverage of the eligible population by 1990.<sup>1</sup> Studies show that the immunization coverage is below the target level due to lack of awareness about immunization among the mothers. Despite efforts of the government and other health agencies,<sup>2</sup> the coverage of all children under the universal immunization programme appears to be a distant dream and there is an urgent need to find the gaps that are preventing from achieving the desired targets of immunization.<sup>3,4</sup> Awareness about disease and its immunization in both urban and rural mothers is needed in all scenarios.<sup>4,5</sup>

Tuberculosis (TB) continues to be one of the most important public health problems worldwide. Children are especially vulnerable to the effects of tuberculosis, which is often difficult to diagnose and therefore difficult to treat effectively. The compliance for treatment can be increased if caregivers of paediatric TB patients are well aware about the disease, treatment and preventive measures.<sup>6</sup> Poor living conditions, malnutrition, shanty housing and overcrowding are the main reasons for the spread of the disease. Children are especially vulnerable to the effects of tuberculosis, which is often difficult to diagnose and therefore difficult to treat effectively.<sup>7,8</sup> TB continues to be major health hazard and BCG vaccination coverage is important.<sup>7,9</sup> BCG coverage is important indicator in TB control and mothers have an important role in it.<sup>10</sup> Considering the situation, this study was done to

identify perception about BCG vaccination and Tuberculosis awareness among urban mothers

### Materials and Methods

A cross sectional study was carried out for a period of 6 months between March-August 2015 in Davanagere, a district headquarters in Central part of Karnataka state. 5 Camps were organised in urban areas of Davanagere with support from local women self help groups for benefit of people residing in different parts of city. Study subjects included women with children attending the camps

**Inclusion criteria:** All women having children less than 5 years and attending the health camp.

**Exclusion criteria:**

1. Women with history of tuberculosis
2. Consent not given

**Study variables:** Study subjects were assessed regarding their knowledge regarding BCG vaccination schedule, side effects, benefits and also about the Tuberculosis disease using pre tested, semi structured questionnaire

**Sample size:** A total of 241 subjects among the many people attending the camp and satisfying the study criteria were considered for the study.

### Statistical Analysis

Data collected were entered using Epidata version 3.1 and analysed using IBMSPSS 21.0.

### Result

Among the 771 people who attended the 4 camps, 496 were females. Among 496 females, 241 were considered for the final study based on study criteria. Regarding general characteristics of participants

majority belonged to Hindu religion [n=192, 82.2%], had nuclear family [n=159, 65%] and were housewife [n=197, 81.7%]. Literates were high in number and majority had one child [n=147, 61%]. [Table 1].

**Table 1: General characteristics of the study population**

Question	Number	Percentage
Religion		
i. Hindu	198	82.2
ii. Muslim	34	14.1
iii. Others	9	3.7
Family Type		
i. Joint	159	65
ii. Nuclear	82	35
Education status		
i. Illiterate	11	4.6
ii. Upto Primary	57	23.7
iii. Upto secondary	57	23.7
iv. Upto college	69	28.6
v. Graduate and above	47	19.4
Occupation		
i. Housewife	197	81.7
ii. Employed	44	18.3
Parity		
i. Primiparity[1]	147	61
ii. Multiparity[2]	77	32
iii. High multiparity[3 and more]	17	7

Regarding BCG vaccination, main source of information was from health department [n=127, 52.7%] followed by relatives [n= 81, 33.6] and media [n=33, 13.7%]. Majority had immunization cards with them [n=209, 86.7%] and got vaccinated at government health facility [n=166, 68.9]. Most of the urban mothers were aware that BCG vaccination can have some side effects [n=219, 90.9%] and also result in scar formation [n=221, 92.1%] [Table 2]

**Table 2: Awareness among Urban mother about BCG vaccination and scar formation**

Question	Number	Percentage
Main source of information		
i. Health worker/ Doctor	127	52.7
ii. Family members/Relatives	81	33.6
iii. Media	33	13.7
Immunization card		
i. Present	209	86.7
ii. Absent	32	13.3
Place of immunization		
i. Govt	166	68.9
ii. Private	75	31.1
BCG causes side effect		
i. Yes	219	90.9
ii. No	22	9.1
BCG results in scar formation		
i. Yes	221	92.1
ii. No	19	7.9
Eldest child's immunization status		
i. Fully immunized	217	90
ii. Partially immunized	23	9.5
iii. Unimmunized	1	0.5

All the participants had heard about Tuberculosis disease [n=241, 100%] and their main source of information was health workers [n=151, 62.7%] and majority knew that it was a contagious disease [n=236, 97.9%] and were also aware about its mode of transmission [n= 199, 82.6%]. Many mothers did not know if TB meningitis was

preventable by vaccination [n=151, 62.7%] but were aware about major symptoms of the disease [n=187, 77.6%], believed that TB is curable [n=238, 98.8%] and had awareness regarding DOTS centre [n=210, 87.1%] [Table 3]

**Table 3: Awareness among Urban mothers about Tuberculosis disease**

Question	Number	Percentage
Heard about TB		
i. Yes	241	100
ii. No	0	0
Source of information		
i. Health worker/ Doctor	151	62.7
ii. Family members/Relatives	33	13.7
iii. Media	57	23.6
TB is contagious disease		
i. Yes	236	97.9
ii. No	5	2.1
Mode of TB transmission		
i. Airway or droplet	199	82.6
ii. Others	42	17.4
Knowledge about Major symptoms of TB		
i. Yes	187	77.6
ii. No	54	22.4
TB meningitis is preventable by vaccination		
i. Yes	60	24.9
ii. No	30	12.4
iii. Dont know	151	62.7
Knowledge regarding DOTS centre		
i. Yes	210	87.1
ii. No	31	12.9
TB is curable		
i. Yes	238	98.8
ii. No	3	1.2

## Discussion

A Study done by Rohit A et al from Dharwad had shown that awareness about BCG was high among both Urban and Rural mothers.<sup>5</sup> Main source of information regarding immunization was health workers and it is consistent with our study.<sup>5</sup> Our study results are also consistent with study from Mangalore which found that knowledge about BCG vaccine and TB prevention, schedule of BCG and formation of papule after vaccination is high among Urban mothers.<sup>11</sup> Rachna and Sheetal, found many of respondents (35%) knew about Tuberculosis.<sup>12</sup> and similar result was found about tuberculosis (52.5%) by Sharma & Bhasin.<sup>13</sup> Research from Egypt has shown that nearly half of higher educated mothers gave their children their vaccinations at time and urban with moderate socioeconomic status had good total knowledge score about vaccination.<sup>14</sup>

Study from Belgrade has shown that Majoriy of study participants had knowledge that TB was a contagious disease and the mode of transmission.<sup>15</sup> Relatives and friends, and to a lesser extent television, were the main sources of information about TB.<sup>5,11,15</sup>

Similiar to our study, a study from south Indian found that majority considered TB as a serious disease.<sup>16</sup> Regarding modes of spread, 65% were aware of cough as a mode of spread, About 16% were not aware of the free treatment for TB.<sup>16,17</sup>

Study results from Saria et al was consistent with our study findings where it was seen that patients awareness about transmission of disease and complete cure was better than previous times. But our results from Gujrat study showed that awareness regarding control and treatment of TB among care givers was matter of grave concern.

## Conclusion

As number of literates are high in number majority of urban mothers are aware of side effects of BCG vaccination and also scar formation. Health workers continue to be main source of information regarding BCG vaccination and many get vaccinated at government health facility. All had heard about Tuberculosis disease and knew that it was a contagious disease. Many mothers did not know if TB meningitis was preventable by vaccination but were aware about

major symptoms of the disease. Awareness regarding mode of transmission was good and many believed that TB is curable and were aware about DOTS centre.

### Acknowledgement

Department of Community Medicine and Department of Pediatrics for cooperation and women of local self help group for their support.

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