

**“A study to assess the knowledge and the practices adopted by the
mothers for their babies vaccinated with BCG
in selected areas in Mumbai.”**

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ABSTRACT

Background of the study:

Tuberculosis remains a worldwide public health problem despite the fact that the causative organism was discovered more than 100 years ago and highly effective drugs and vaccine (BCG) are available making tuberculosis a preventable and curable disease. Pertaining to BCG vaccination in children, the improper practices of this vaccination leads to ineffective immunity making the child susceptible to tuberculosis.

Aim:

The aim of study is to find out the various improper practices of post BCG vaccination care prevalent in the community;

Objectives of the study:

- To familiarize with the various practices followed during the care of babies who are vaccinated with BCG.
- To assess the knowledge of the mothers regarding the post BCG vaccination care of the children.
- To explore the association between the mothers' knowledge of practice and selected demographic variables.

Method:

The research approach is explorative approach, the design is survey research design, and the setting is various immunization centers in Mumbai. The sample includes 50 mothers attending the immunization clinics. The tool consists of Section A: Demographic data consisting of 8 items, Section B: Multiple-choice questions consisting of 12 items.

Results:

The finding of the study shows that 88% of mothers followed good practices for post BCG care and of the 12% that did not, 6% applied cold fomentation, 4% applied oil/sandal wood and 2% massaged the site

Interpretation and Conclusion: Over all findings showed that majority of mothers carried out proper practices for the babies who were vaccinated with BCG; the study also showed that only 6% of mothers knew that the BCG vaccine prevents Tuberculosis. The study also revealed that 60% of the mothers reported that there was no papule formation post BCG vaccination.

ACKNOWLEDGEMENT

“At times our own light goes out and is rekindled by a spark from another person. Each of us has a cause to think with deep gratitude of those who have lighted the flame within us.

- Albert Schweitzer.

We owe a deep sense of gratitude to all who contributed to the accomplishment of this study.

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- ❖ Miss Sareeta Kadam

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CHAPTER 1

INTRODUCTION

“You will become better at something if you practice well.”

BCG vaccine is the accepted form of protection against Tuberculosis worldwide. At best the BCG vaccine is 80% effective in preventing tuberculosis for duration of 15 years (Native Americans 1930); however, its protective effect appears to vary according to geography. (Wikipedia)

The proper practices of effective vaccination involves ensuring the correct age, i.e. early in infancy either at birth (for institutional deliveries) or at 6 weeks of age simultaneously with other immunizing agents such as DPT and polio, the correct dosage, the usual strength is 0.1 mg in 0.1 ml volume and the dose to newborn aged below 4 weeks is 0.05 ml. (WHO 1980), also the correct administration, injecting the vaccine intradermally using a “Tuberculin” syringe (omega microstat syringe fitted with 1 cm steel 26 gauge intradermal needle) and the care of injection site such as it should not be pressed, rubbed or fomented. In fact, bath with soap and water should suffice even when it has ulcerated. For effective immunity in Tuberculosis the post vaccination phenomena occurs two to three weeks after a correct intradermal injection of a potent vaccine, a papule develops at the site of vaccination. It increases slowly in size and reaches a diameter of about 4 to 8 mm in about 5 weeks. It then subsides or breaks into a shallow ulcer, rarely open, but usually seen covered with a crust.

Healing occurs spontaneously within 6 to 12 weeks leaving a permanent, tiny, round scar, typically 4-8 mm in diameter. This is a normal reaction (Dam, H.G.T.et al (1976). (Bull WHO,). Normally the individual becomes Mantoux-positive after a period of 8 weeks has elapsed, but sometimes about 14 weeks are needed. The correct practice would also involve understanding of all the above observations

NEED FOR STUDY

Tuberculosis is a major public health problem in India. India accounts for one-fifth of the global TB incident cases. Each year nearly 2 million people in India develop TB, of which around 0.87 million are infectious cases. It is estimated that annually around 330,000 Indians die due to tuberculosis {WHO, 2009}

It is also a major health problem in children, cases of tuberculosis in children usually represent between 10 to 20 per cent of all tuberculosis. The risk of infection to a child depends on extent of exposure to infectious droplet nuclei. An infant whose mother has sputum smear-positive PTB has a high chance of becoming infected. The chance of developing disease is greatest shortly after infection, and steadily decreases as the time goes by. Because of less-developed immune system, children under 5 years of age are more prone to develop (up to 20 per cent) the disease mostly within 2years following infection (WHO 2004).

However, children can be protected from tuberculosis by vaccinating them with BCG vaccine, a live vaccine which itself induces a benign primary infection, which leads to some immunity. But whole aim of protecting children can be compromised by improper post BCG vaccine care of children such as application of cold fomentation, home remedies – sandal wood, oil over injection site or massaging the site which would lead to ineffective immunity

As observed, in our clinical and community experiences, people were superstitious and ignorant of the correct post vaccination care; therefore a study on post BCG vaccination care was undertaken to further explore the practices followed by the mothers.

STATEMENT OF PROBLEM

“ A study to assess the knowledge and the practices adopted by the mothers for their babies vaccinated with BCG in selected areas in Mumbai.”

OBJECTIVES:-

- To familiarize with the various practices followed during the care of baby vaccinated with BCG.
- To assess the knowledge of the mothers regarding the post BCG vaccination care of the children.
- To explore the association between the mothers' knowledge of practice and selected demographic variables.

ASSUMPTIONS:-

- Babies receive BCG vaccination.
- Mothers care for the babies vaccinated with BCG.

DELIMITATIONS:-

- The study is limited to mothers whose babies have received BCG vaccine.
- Data collection period is limited to 1 to 2 weeks.

OPERATIONAL DEFINITION

1. **STUDY:** - According to Oxford Dictionary, it means the devotion of time and attention to acquire information and knowledge, especially from books.
2. **EXPLORE:** - According to Oxford Dictionary, it means travel in or through (an Unfamiliar country or area) in order to learn about or familiarize oneself with it:
3. **KNOWLEDGE:** - As per Oxford Dictionary; it means “Something that is known”
In this study, knowledge means knowledge of the mothers regarding practices of post BCG care, vaccination and BCG vaccine.
4. **IMPROPER:** - Not suited to circumstances or needs; unsuitable
5. **PRACTICE:** - As per Oxford Dictionary, it means “Repeated exercise to improve skills,”

In this study improper practice connotes the various methods used by the mothers for caring their babies who have received BCG vaccine, like application of cold fomentation, home remedies – sandal wood, oil over injection site or massaging the site.

CONCEPTUAL FRAMEWORK

Conceptualization is the process of forming ideas, design and plan. Conceptual framework refers to general or abstract ideas which are formulated by generalizing from particular manifestation of certain behavior or characteristics.

“A theoretical frame work serves as a guide or map to systematically identify a logical precisely defined relationship between variables.”

(Wood and Haber, 1994)

The theoretical framework for the present study is developed from Rosenstocks’s HEALTH-BELIEF MODEL (1974), which addresses the relationship between person’s belief and behavior. In the following modified form of health belief model, the belief is regarding BCG vaccination and behavior is the post BCG vaccination care. It provides a way of understanding and predicting how clients will behave in relation to their health how they will comply with health care therapies.

The model focuses on the three major categories of determinants of heath belief:-

- ✓ The cognitive perceptual factors
- ✓ The modifying factors
- ✓ Participation in health promoting factors.

1. The Cognitive Perceptual Factors

In the present study, these factors include the mothers understanding and their knowledge about the various practices of post BCG care, their efficacy in carrying out those practices, and the barriers which deviate them from the actual normal practices.

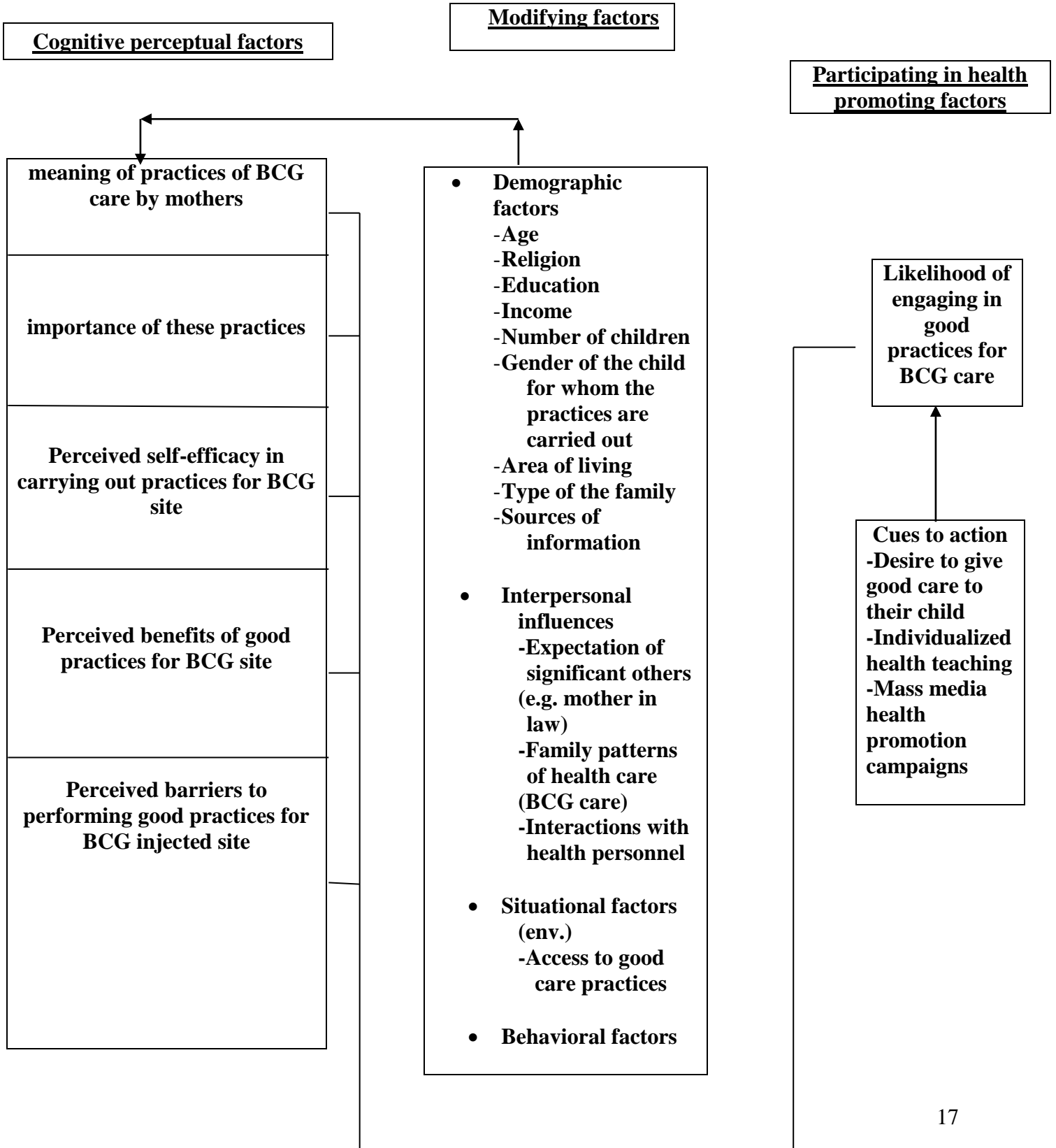
2. The Modifying Factors

In the present study, these factors include demographic factors such as age, religion, education, income, number of children, etc., interpersonal influences, including the expectations of the significant others, family patterns of health care and interactions with health personnel., situational or environmental factors like access to good health care practices., and behavioral factors such as cognitive and psychomotor skills required for good practices.

3. Participation in Health Promotion Factors

In the present study, these factors include the external and internal cues to good practices like desire to give good care to their child, individualized health teaching, mass media influence and health promotional campaigns.

CONCEPTUAL FRAMEWORK OF THE STUDY



SCOPE OF THE STUDY

- This study will provide information on the practices carried out by mothers of BCG vaccinated babies.
- The result of this research may be used by the nursing students to educate the mothers about the good practices to be followed and improper practices to be avoided for the babies vaccinated with BCG
- The experience of conducting this study will enhance the confidence of the students regarding research methodology.

CHAPTER-2

REVIEW OF LITERATURE

“Review your goals twice everyday in order to be focused on achieving them”

-----Les Brown

Review of literature involves “ The selection of available documents on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated and the effective evaluation of these documents in relation to the research being proposed.” ----- (HART, 1998)

Review of literature is important to gain better understanding and the insight necessary to develop a broad conceptual framework in which a problem can be examined. It helps in the formulation of a specific problem, acquaints the investigators to what is already known in relation to the problem under review , provides a basis for assessing the feasibility of a research problem and gives information on the research approach

----- Polit and Hungler (1978),

The review of literature for this study was grouped under the following components such as variable efficacy of BCG vaccine, risk factors for developing tuberculosis, BCG vaccination reaction, and genetic regulation for tuberculin reactivity, BCG revaccination

The most controversial aspect of BCG is the variable efficacy found in different clinical trials that appears to depend on geography. Trials conducted in the UK have consistently shown a protective effect of 60 to 80%, but those conducted elsewhere have shown no protective effect, and efficacy appears to fall the closer one gets to the equator.

The first large scale trial evaluating the efficacy of BCG was conducted from 1956 to 1963, and involved 54,239 school children who received BCG at the age of 14 or 15; this study showed an efficacy of 84% up to 5 years after immunization. However, a US Public Health Service trial of BCG in Georgia and Alabama published in 1966 showed an efficacy of only 14%, and did much to convince the US it did not want to implement mass immunization with BCG. A further trial conducted in South India and published in 1979 (the "Chingleput trial"), showed no protective effect.

The duration of protection of BCG is not clearly known. In those studies showing a protective effect, the data are inconsistent. The_MRC study showed protection waned to 59% after 15 years and to zero after 20 years; however, a study looking at Native Americans immunized in the 1930s found evidence of protection even 60 years after immunization, with only a slight waning in efficacy.

A study was conducted on risk factors for developing tuberculosis among the contacts of TB cases in Canada for 12 years period. Among 33 146 TB contacts, 228 developed TB during the study period (TB rate 668 per 100,000 population, 95%CI 604-783). The main risk factors for TB development were malnutrition (HR 37.5), no treatment of latent TB infection (HR 25) or <6 months of treatment (HR 5.38), age 0-10 years (HR 7.87), being a household contact (HR 8.47) and having a tuberculin skin test indurations of ≥ 5 mm (HR ≥ 4.99). Bacille Calmette-Guérin vaccination significantly reduced the risk of TB development (HR 0.32, 95%CI 0.20-0.50). The study concluded that there are few factors that carry a very high risk for developing TB. These factors identify populations at highest risk and permit more effective TB control.

A study was conducted to study the reaction of BCG vaccination in LBW, preterm and normal birth weight newborns in India. A total of 143 newborns (90 term and 53 preterm; of these 78 were LBW) received during March to September 1998, 0.1 ml of BCG vaccine (Danish 1331 strain) intradermally on the left arm just above the insertion of the deltoid muscle within 7 days of life. At the same time trivalent oral polio vaccine was administered as per the national immunization program. These babies were followed up in the immunization clinic at 4, 6, 8, 10 and 12 \pm 1 wk to observe reactions at the BCG vaccination site. After 4 wk reaction at the vaccination site was significantly ($P < 0.001$) delayed in preterm babies as compared to term infants, and in the LBW babies ($P < 0.05$) as compared to NBW babies. The reaction at the site of vaccination was not found to be different at 6, 8, 10, 12 wk. BCG scar was seen in 47.5 per cent infants (45.4% in < 2500 g birth weight and 50% in ≥ 2500 g birth weight infants) at 12 wk. But 33 (42.3%) LBW and 24 (36.9%) NBW infants also showed

papule, pustule, ulceration or scab at the BCG vaccination site. The study concluded that no significant difference was seen in the scar formation in infants studied with varying gestation and birth weights after 12 wk of BCG vaccination. BCG vaccine along with OPV administered in early neonatal life showed successful BCG reaction in 95.5 per cent infants.

A study was conducted to determine the possibility of a genetic regulation in tuberculin reactivity by comparing the tuberculin reactivity of BCG-immunized parents and siblings of infants who failed to respond to BCG, and of infants who developed tuberculin reactivity after immunization, by department of Pediatrics, Hospital Luis Calvo Mackenna, University of Chile Medical School, and Santiago. They studied 65 parents and siblings of 33 no responder infants, and 35 parents and siblings of 14 infants who had developed tuberculin reactivity. Tuberculin reactivity was analyzed by multiple regression analysis considering the BCG immunization status of each individual, and the 2 groups were compared by analysis of covariance.⁹⁶ of these family members had one or more BCG scars. The percentages of tuberculin reactors and non-reactors among BCG-immunized family members of both index infant groups were not significantly different. Study concluded that maturational differences among newborns, rather than genetic regulation, account for the lack of development of cellular immunity against tuberculin after BCG immunization in some infants.

A study was conducted to describe the evolution of BCG vaccination site between 48 hours and 10 weeks post-revaccination. A descriptive cohort study was carried out involving 484 children between six and 11 years. The subjects were vaccinated with 0.1 mL of BCG-Moreau. Erythema, induration, pustule, ulcer, crust and final scar were measured within 48 h,

72 h and weekly until the tenth week, evaluated between July and December 1987. Epi Info 6.0 software was utilized to analyze frequencies, means, median and standard deviations. Induration was present in 99.1% and erythema in 91.6% of 438 children evaluated within 48 h. Pustule was observed in the first week in 26.1% of 479 children. The first ulcers were seen during the second week. In the tenth week, 69.8% of 463 children showed crusts but only 29.2% completed the healing process. the study concluded that BCG revaccination in school-age children causes intense and early reaction that can be related to Koch phenomenon, even though it does not present the expected reduction in the healing period. The magnitude of the reaction is not enough to discourage its recommendation for school-age children. On the other hand, it is possible that the rapid inflammatory response is an indication of active immune response from the first vaccination.

In preliminary survey through Google and Pub med, the researcher could not find any literature related to post BCG vaccination care practices

CHAPTER-3

RESEARCH METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure for gathering valid and reliable data for the purpose of investigation.

Research methodology organizes all the components of the study in a way that is more likely to valid answers to the sub-problems that have been posed.

This chapter deals with the description of methods and different steps used for collecting and organizing the data. It includes research approach, research design, setting, sample and sampling technique, development and description of tool, pilot study, data collection procedure and plan for data analysis.

RESEARCH APPROACH

The research approach explains the basic procedure for the conduct of research enquiry. It also suggests possible conclusion to be drawn from the data. In the present study, an explorative approach was used to find out various wrong practices carried out by the mothers for their babies vaccinated with BCG.

RESEARCH DESIGN

The investigator's overall plan for obtaining answers to the research questions for testing the research hypotheses is referred to as research design.

The research design incorporates the most important methodology decisions that a researcher makes in conducting a research study. It depicts the overall plan for organization of scientific investigation. It helps the researcher in selection of subjects and observation of the type of statistical analysis to be used to interpret the data.

The research design selected for the present study was a survey research design to find out the practices carried out by the 50 samples selected by non-probability convenient sampling.

SETTING OF THE STUDY:-

Setting refers to the area where the study was conducted. It may be natural setting or laboratory setting depending upon the study topic and researcher's choice.

The present study was conducted at F SOUTH ward Brihnmumbai Municipal Corporation (BMC), Parel and BMC maternity hospital at Bhandup, Mumbai. The criteria for selecting study setting are the existence of sample (mothers coming for the vaccination of their child), feasibility of conducting the study and the investigators familiarity with the setting and people.

POPULATION: -

Population is a group whose members possess specific attributes that a researcher is interested in for the study. The target population of this study comprises the mothers coming to the immunization centre for their babies vaccination and babies have already received BCG vaccine.

SAMPLE AND SAMPLING SIZE: -

Sampling is the process of selecting a group of people, events, behavior or other elements with which a study is conducted.

Sample is a subset of population selected to participate
In a research study.

The sample size for the present study was 50. And the sample is mother at the immunization center, in Mumbai.

SAMPLING TECHNIQUE: -

It is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population.

(BT.BASAVANTHAPPA)

As selection of samples depended upon their availability, the sampling technique used was NON- PROBABILITY CONVENIENT SAMPLING.

In this method the researcher selects those units of the population in the sample which appear convenient to him or to the management of the organization where he is conducting the research.

(BT.BASAVANTHAPPA)

CRITERIA FOR SAMPLE SELECTION:-

INCLUSION CRITERIA

- Mothers who can understand Marathi, Hindi, English, etc.
- Mothers who are willing to participate.

EXCLUSIVE CRITERIA

- Mothers who are not willing to participate in the study.

Instrument Used For the Study: -

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. An instrument selected in a research study should be as far as possible the vehicle that would best obtain data for drawing conclusions, which are pertinent to the study.

DEVELOPMENT OF THE TOOL:-

A structured multiple-choice question was developed to assess the knowledge and practices of mothers for the babies vaccinated with BCG. The tool was developed after the review of literature on relevant topics, discussion with experts, and on the personal experience of the investigator.

Description of the tool: -

A structured interview schedule (widely used in surveys, it is filled out by the interviewer by asking lists of questions to the respondents) was developed to assess the knowledge and practices of the mothers for their babies vaccinated with BCG. The tool for data collection consisted of the following two parts: -

Section A: - Demographic variables: -

This section contained 8 items for obtaining the information of the mothers such as age, education, locality of living, number of children, structure of family, place of delivery, gender of the child, religion of mother.

Section B: - Structured questionnaire on: -

- 1- The objective of this is to assess the knowledge regarding vaccination. It consisted of three questions with four responses to each.

- 2- The objective of this is to assess the knowledge regarding BCG vaccination. It consisted of three questions with four responses to each.

- 3- The objective of this is to find out practices adopted by the mothers for their babies vaccinated with BCG. It consisted of six questions with four responses to each.

TESTING OF THE INSTRUMENT

Validity refers to whether a measuring instrument accurately measures what it is supposed to measure.

Content Validity

Validation of the content of the tool was done by obtaining responses from the experts. The experts were requested to give their opinion and suggestions regarding the relevance and appropriateness of the tool. Based on the inputs from the experts and statistician and in consultation with the guide and co-guide, the tool was modified to make the questions more appropriate for the intended purpose.

Pre-testing the tool: -

Pre-testing is the trial administration of a newly developed instrument to identify flaws and assess the time requirements.

PILOT STUDY

A pilot study is a small preliminary investigation of the same general character as a the major study, which is designed to acquaint the researcher with problems that can be corrected in preparation for the large research projects or is done to provide the researcher with an opportunity to try out the procedures for collecting data. (BT BASAVANTHAPPA)

The main objective of the pilot study was to help the researchers to become familiar with the use of tool and find out the difficulties to conduct the main study.

The pilot study was conducted at f south ward immunization clinic BMC, Parel, Mumbai. On 17th Oct.2011.

The sample size selected for the pilot study was 5. (Mothers who had come for the immunization of their babies)

The investigator approached the respondents individually and discussed the overview of the study and obtained their verbal consent and confidentiality was assured. The interview schedule was carried out on 5 mothers eliciting their demographic data and the data related to the knowledge and practices of post BCG care. Responses were recorded simultaneously.

Pilot study was analyzed. It led us to make few changes to the tool for e.g. adding an option of “don’t know” instead of “none of the above” in the question’s options. The pilot study could not reveal any wrong practices by mothers.

DATA COLLECTION PROCESS:-

Permission from the concerned authority

A formal permission was obtained from the in charges of the immunization centers.

Period of data collection

The data collection was done on 18th Oct.2011.

The investigators grouped themselves into two and collected data from two immunization centers.

PLAN FOR DATA ANALYSIS

The plan for data analysis is as follows: -

- Organization of data in master sheet
- Analysis of the demographic characteristics of the sample
- Analysis of data related to knowledge and practices
- Representation of the data in tables with graphs.

The data was analyzed in terms of the objectives of the study using frequency and percentage distribution

This chapter has dealt with methodology which includes the research approach i.e. explorative and the design i.e. survey research, the setting and population, the development of instrument, the description of data collection procedure and plan for data analysis.

CHAPTER 4

ANALYSIS AND INTERPRETATION

*“Discovery consists of seeing what everybody has seen and
Thinking what nobody has thought”*

-Albert Sunt

In order to find a meaningful answer to the research question, the collected data must be processed, analyzed in some coherent fashion, so that patterns and relationship can be discerned.

An explorative research approach was adopted to find out the various practices of mothers carried out for their babies vaccinated with BCG. The data collected from the mothers was tabulated, analyzed and interpreted by using frequency and percentage.

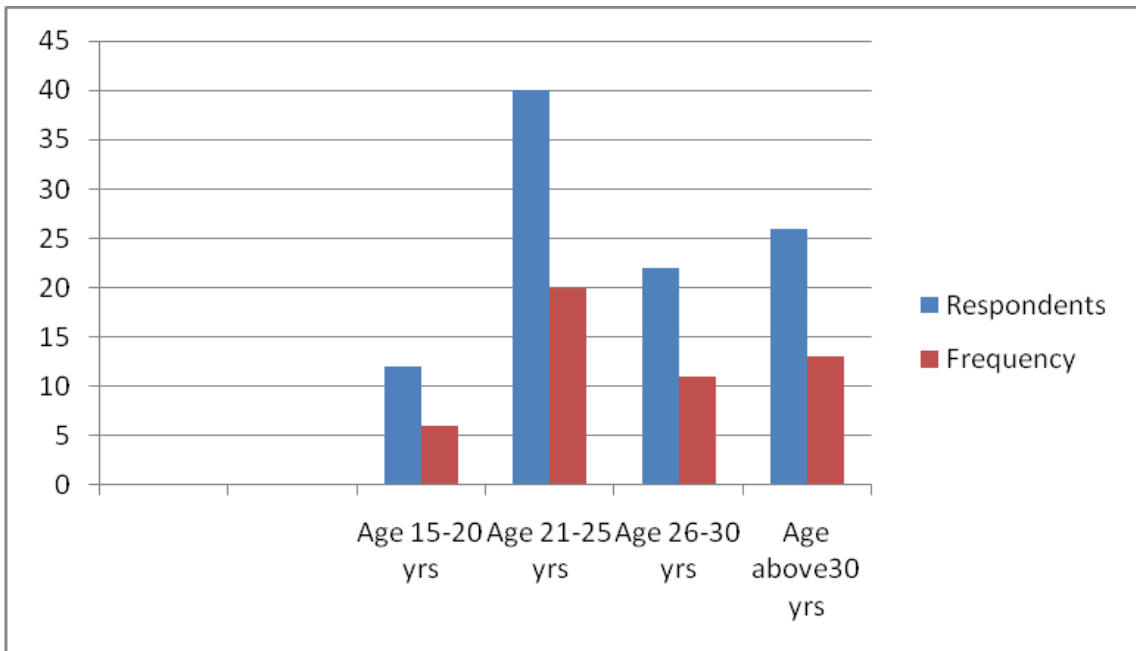
OBJECTIVES: -

- To familiarize with the various practices followed during the care of baby vaccinated with BCG.
- To assess the knowledge of the mothers regarding the post BCG vaccination care of the children
- To explore the association between the mothers' knowledge of practice and selected demographic variables.

Table 1. Age of the respondents.		
Age	Respondents %	Frequency
Age 15-20 yrs	12	6
Age 21-25 yrs	40	20
Age 26-30 yrs	22	11
Age above30 yrs	26	13

N=50

Figure 3-

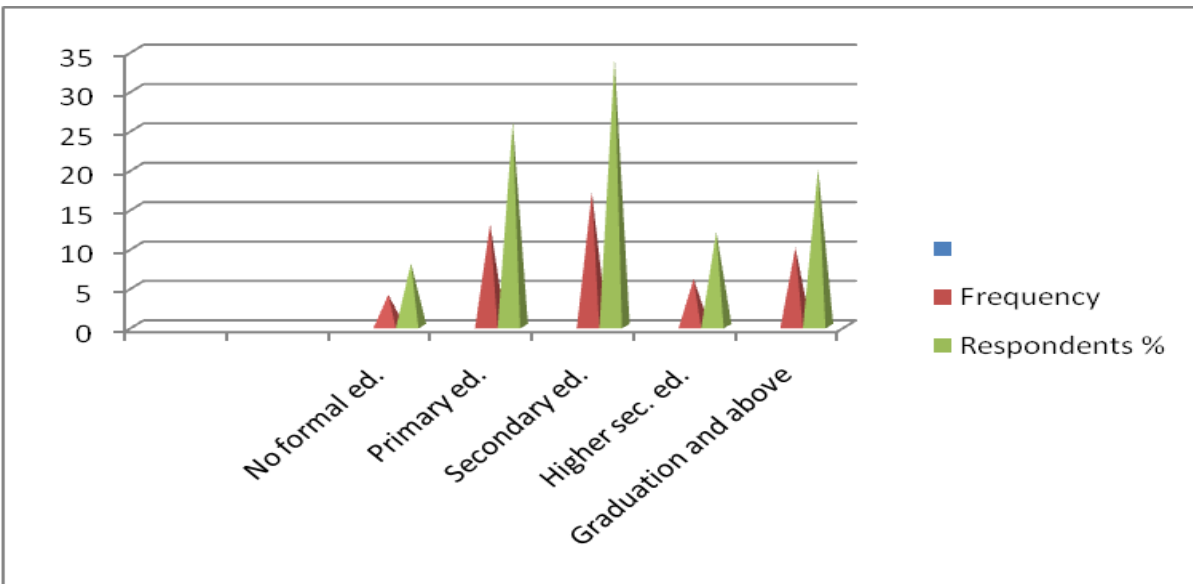


Above figure shows that majority 40% of respondents were in the age group of 21-25 years. The percentage of respondents above 30 years of age was 26%. The 12% of respondents fall in the age group of 15 to 20 year

Table 2. Education of the respondents.		
Education	Frequency	Respondents %
No formal education	4	8
Primary education	13	26
Secondary education	17	34
Higher sec. education	6	12
Graduation and above	10	20

N=50

Figure 4

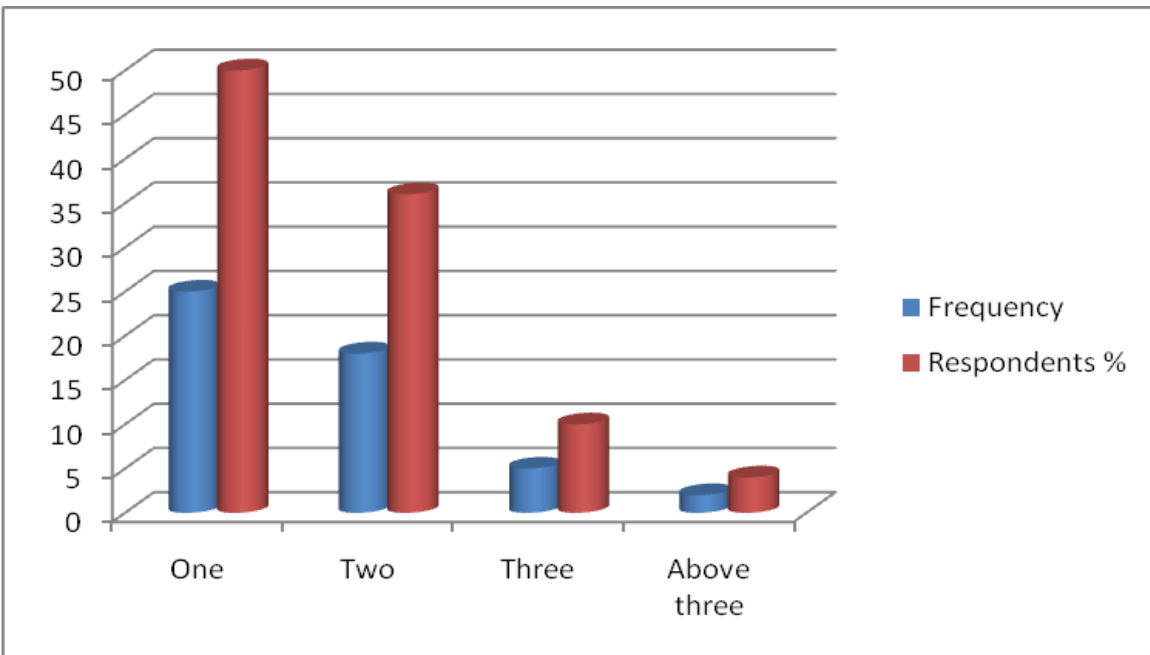


Above figure shows that 34% of respondents had studied till secondary education, followed by 26% of respondents having done only primary education. The percentage of respondents having no formal education was 8%. There were 20% respondents who had pursued graduation and further studies.

Table 3 .No. of children		
No. of children	Frequency	Respondents %
One	25	50
Two	18	36
Three	5	10
Above three	2	4

N=50

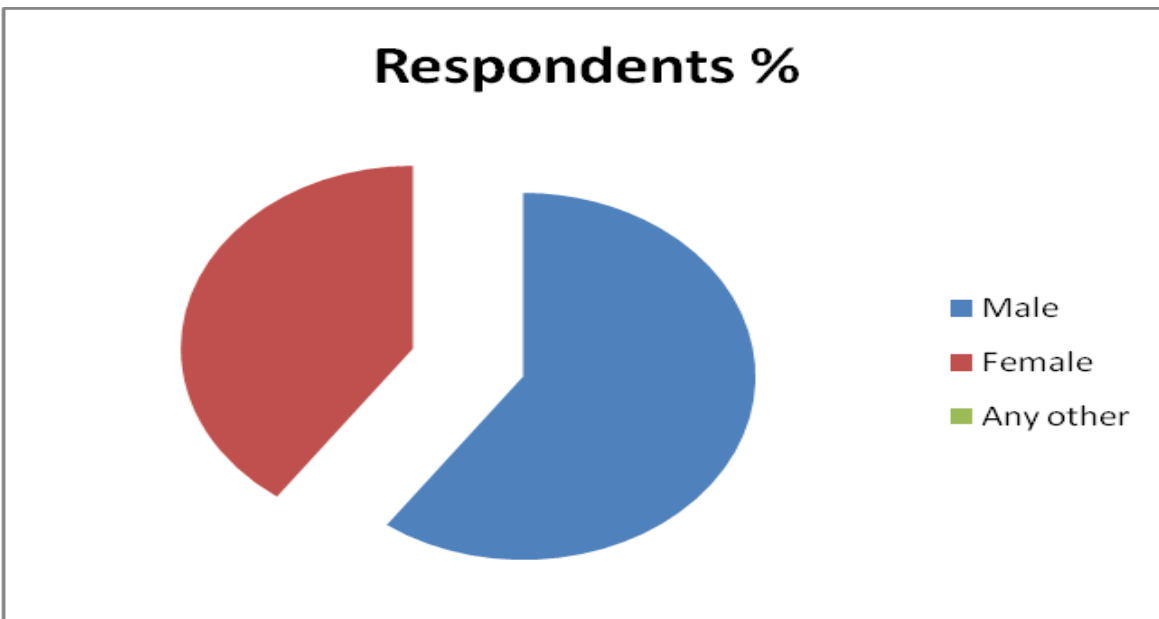
Figure 5-



Above figure shows that 50% respondents were having one child, the percentage of respondents having two children was 36%. The 4% respondents had above three children.

Table 4 Gender of child		
Gender	Respondents %	Frequency
Male	60	30
Female	40	20
Any other	0	0

Figure 6-

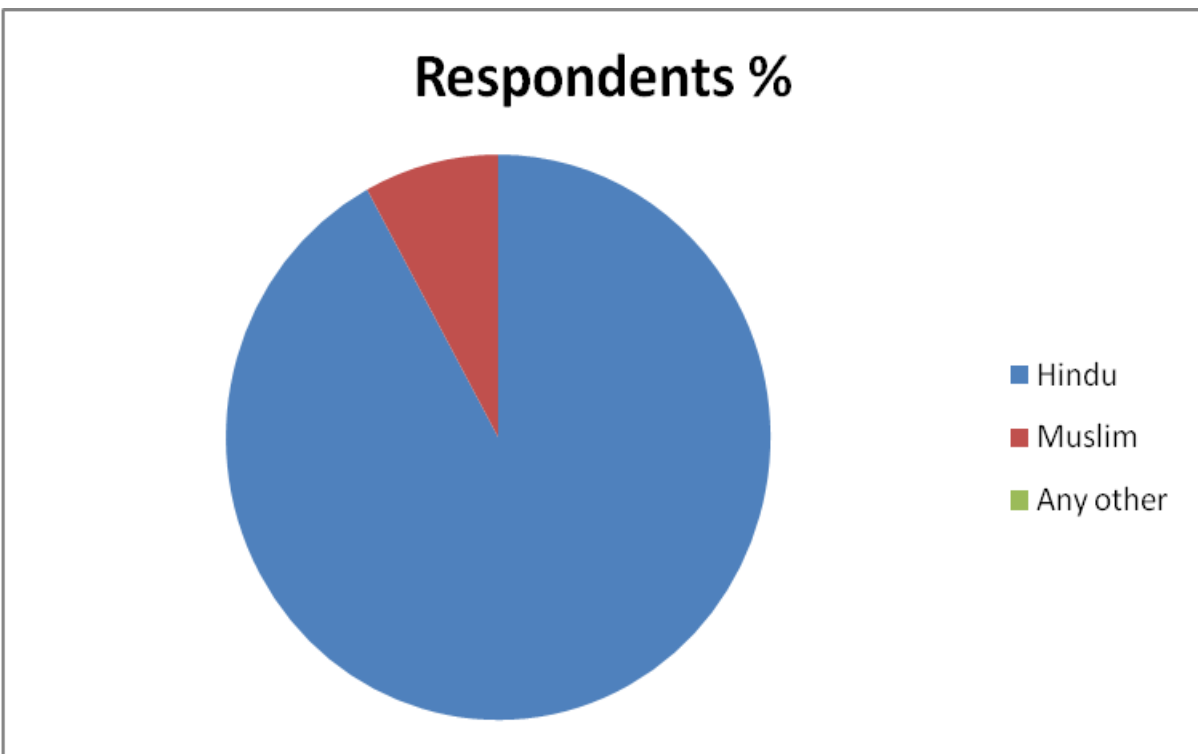


The above figure shows that 60% respondents were caring for male child vaccinated with BCG; while 40% respondents were caring for girl child vaccinated with BCG.

Table 5 Religion.		
Religion	Respondents %	Frequency
Hindu	92	46
Muslim	8	4
Any other	0	0

N=50

Figure 7-

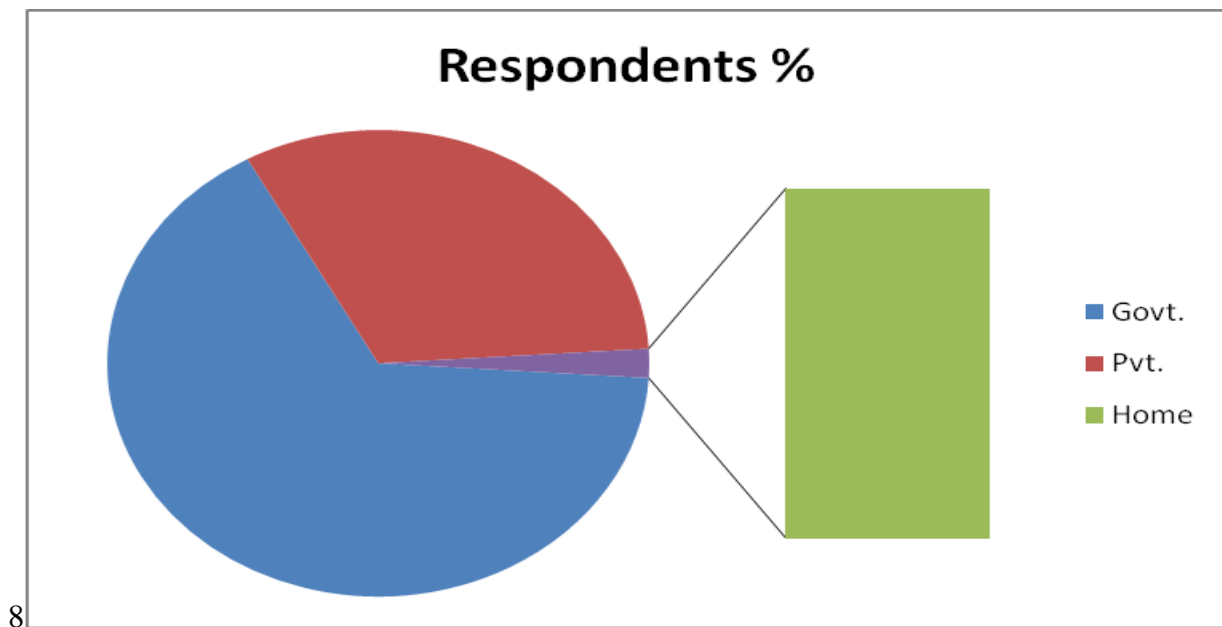


Above figure shows that majority 92% respondents were Hindu and only 8% were Muslim.

Table 6- Place of birth		
Place	Respondents %	Frequency
Government	66	33
Private	32	16
Home	2	1

N=50

Figure 8

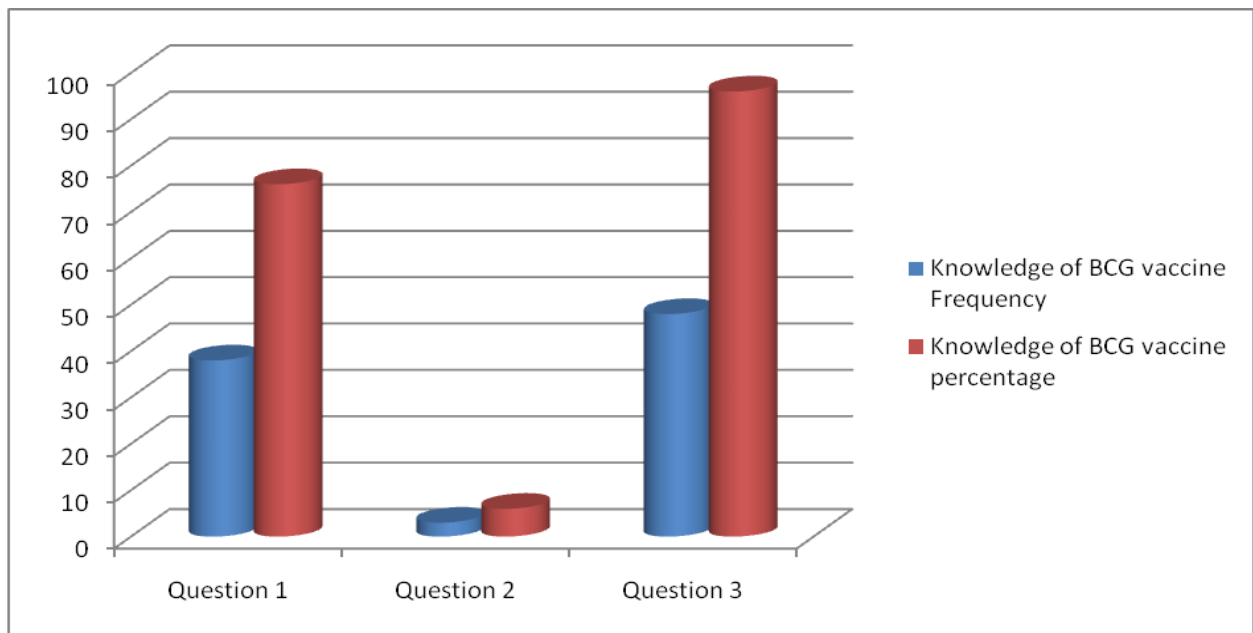


8

From the above figures it is learnt that 66% of respondents had given birth to child in government hospital, while private hospital deliveries were 32%. Only one case that is 2% of respondents found to deliver at home.

Table 7 Knowledge of BCG vaccine (tool: section B 2) (Correct responses)		
Section B 2	Frequency	Percentage
Question 1	38	76
Question 2	3	6
Question 3	48	96

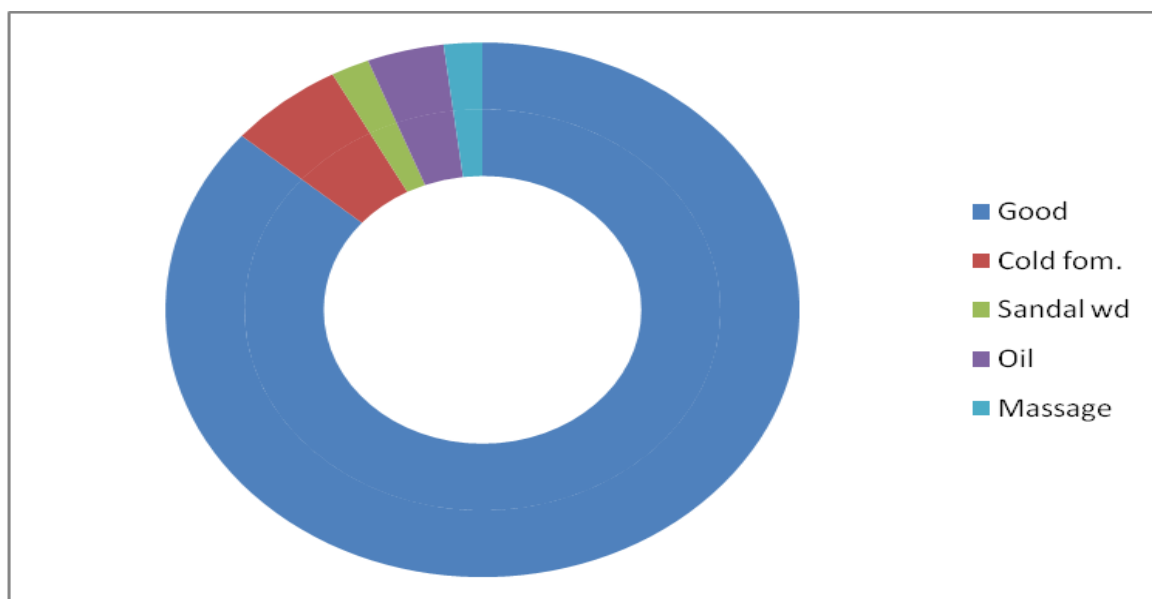
Figure 9



76% of respondents knew correctly about the age at which child should receive BCG vaccine. Only 6% of respondents knew that BCG vaccine is administered to prevent tuberculosis. 96% respondents knew that BCG vaccine is injected on left upper arm.

Table 8 Post BCG care practices		
Practices	Respondents %	Frequency
Good	88	44
Cold fomentation	6	3
Sandal wood application	2	1
Oil	4	2
Massage	2	1

Figure 10

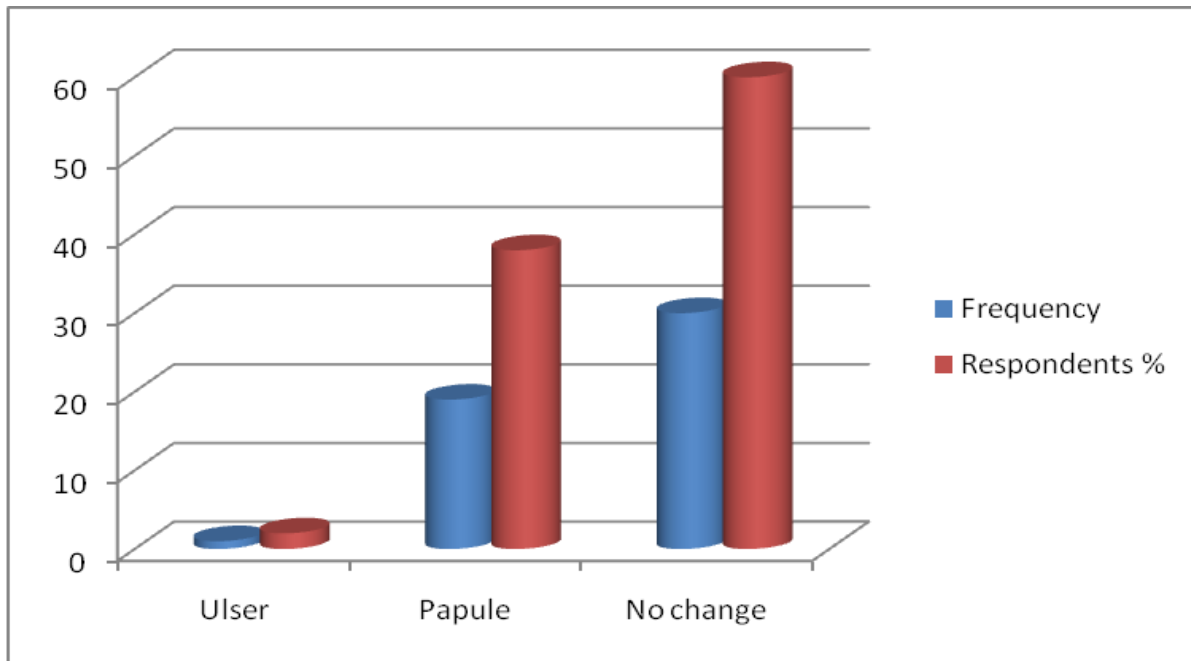


The above figure shows that 88 percentages of respondents followed appropriate post BCG care practices, 6 % of respondents had practiced cold fomentation while oil application over BCG injected site was carried out by 4% respondents. 2% respondents each followed the practices such as sandal wood application and massage.

Table 9 . Observation at vaccine site		
Observation	Frequency	Respondents %
Ulcer	1	2
Papule	19	38
No change	30	60

N=50

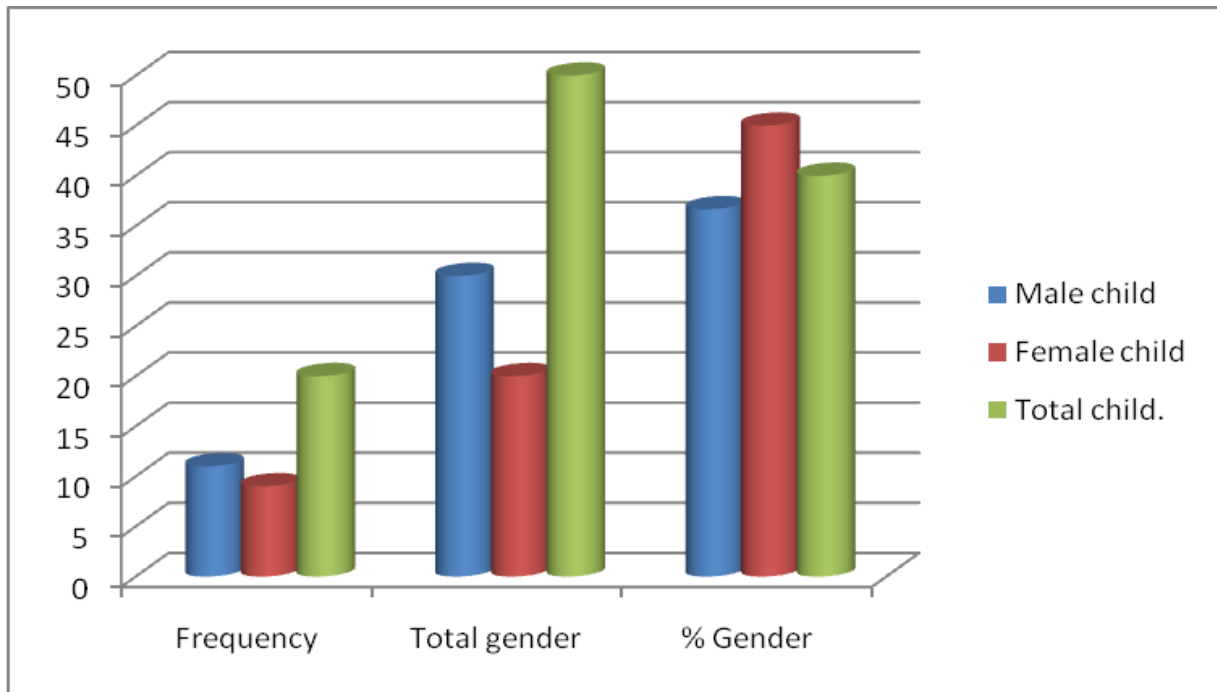
Figure 11



Above figures express that 60% of respondents did not notice any change at vaccine site, 38% percentages of respondents reported formation of papule at the vaccine site. There was only one case i.e. 2% respondents noticed ulcer formation.

Table 10 Gender and development of papule			
Gender Of child	Frequency	Total	% of Gender
Male child	11	30	36.66
Female child	9	20	45
Total	20	50	40

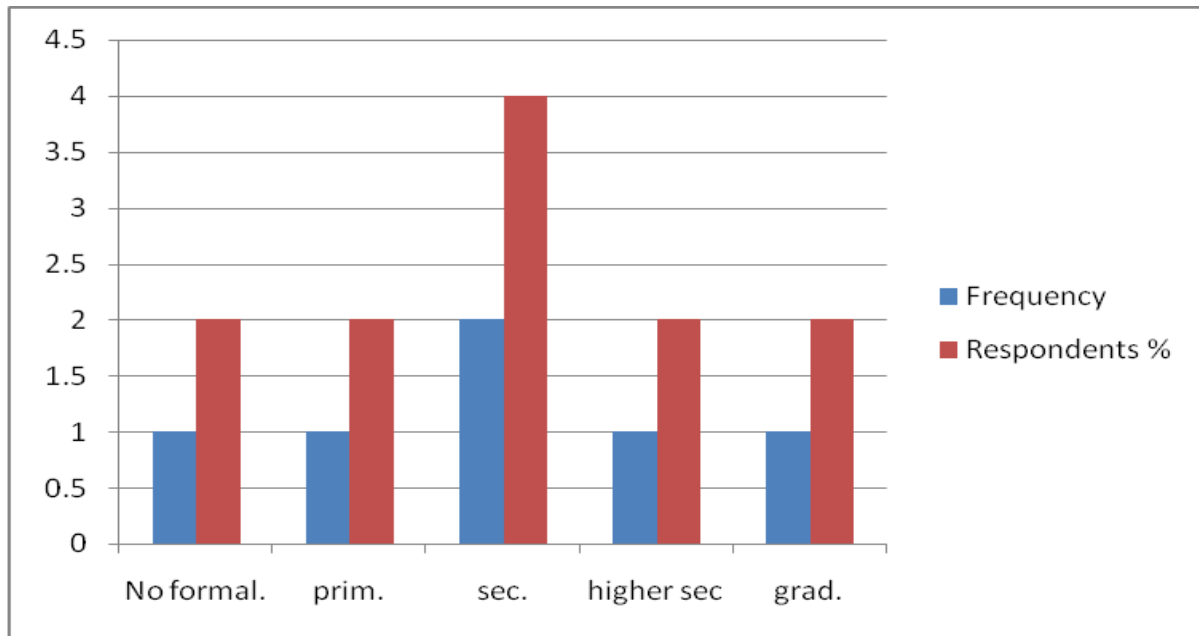
Figure 12



The above figures show that the total no. of children out of 50 who developed papule were 20 i.e. 11 male and 9 female children. Hence total % of children developing papule was 40%. There were 30 male children out of which 11 developed papule hence the % of only male is 36.66% vis-à-vis 45% that of female children.

Table 11 Relation Between Education of mothers' and the IMPROPER practices of BCG care		
Education	Frequency	Respondents %
No formal education	1	2
Primary	1	2
Secondary	2	4
higher secondary	1	2
Graduate	1	2

Figure 13



The above figure depicts the correlation between education and wrong practices; 4% respondents who follow wrong practices have studied till secondary education. 2% of respondents fall into each educational categories.

CHAPTER-5

SUMMARY

This chapter deals with the summary of the study and its major findings along with recommendations. The present study was to assess the knowledge and the practices adopted by the mothers for their babies vaccinated with BCG in selected areas in Mumbai.

The present study aimed to achieve the following objectives.

- To familiarize with the various practices followed during the care of baby vaccinated with BCG.
- To assess the knowledge of the mothers regarding the post BCG care of the child.
- To explore the association between the mothers' knowledge of practice and selected demographic variables.

The conceptual framework for the study is developed from Rosenstocks's HEALTH-BELIEF MODEL (1974). It provides the comprehensive outlook for the study. The review of related research and non-research literature helped the investigator to develop the conceptual framework, interview schedule questions. Explorative approach was used to determine the knowledge and find out the post BCG vaccination care practices and the research design is survey research design.

The study was conducted at immunization centers in Mumbai, the sample consisted of 50 mothers, and the convenient sampling technique was used to select the samples.

The tool used in data collection was

- Section A: Demographic data consisting of 8 items.
- Section B: Multiple-choice questions consisting of 12 items.

A pilot study was conducted for 5 samples and those were excluded from the main study.

The main study was conducted on 50 mothers. Interview schedule was carried out. The data collected was analyzed using frequency and percentage and interpreted in terms of the objectives.

Major findings of the study:

Demographic characteristics:

- ❖ 40% of respondents were in the age group of 21-25 years.
- ❖ 34% of respondents had studied till secondary education.

- ❖ The percentage of respondents having no formal education was 8%
- ❖ 50% respondents were having one child
- ❖ 92% respondents were Hindu and only 8% were Muslim.
- ❖ 66% of respondents had given birth to child in government hospital
- ❖ Only one case that is 2% of respondents found to deliver at home.

Knowledge of BCG vaccine:

- ❖ 76% of respondents knew correctly about the age at which child should receive BCG vaccine.
- ❖ Only 6% of respondents knew that BCG vaccine is administered to prevent tuberculosis.
- ❖ 96% respondents knew that BCG vaccine is injected on left upper arm.

Post BCG vaccine practices:

- ❖ 88% of mothers followed good practices for post BCG care
- ❖ 6% of mothers followed cold fomentation application
- ❖ 4% of them followed oil application
- ❖ Sandalwood and massaging followed by 2% of mothers.

Observation of vaccine-injected site:

- ❖ 60% of respondents did not report of any change at vaccine site
- ❖ 38% percentages of respondents reported formation of papule at the vaccine site.
- ❖ There was only one case i.e. 2% respondents noticed ulcer formation.
- ❖ The total number of children out of 50 who developed papule were 20 i.e. 11 male and 9 female children.
- ❖ Total percentage of children developing papule was 40%
- ❖ The percentage of male was 36.66% vis-à-vis 45% of female children who developed papule at vaccine injected site.

RECOMMENDATIONS:

- A similar study can be conducted in large population for wider generalization.
- A comparative study can be conducted to find out post BCG vaccination care practices among urban and rural mothers.
- A comparative study can be conducted to assess the BCG vaccine knowledge among urban and rural mothers.
- This study came up with result that most of the babies did not develop papule (60%), so a study can be done to ascertain this.

CONCLUSION

“Begin thus from the first act, and proceed; and, in conclusion, at the ill which thou hast done, be troubled, and rejoice for the good.”

-Pythagoras

This study was conducted to assess the knowledge and the practices adopted by the mothers for their babies vaccinated with BCG in selected areas in Mumbai. In this study, survey design was used; by taking 50 samples through convenient sampling technique. Using interview schedule collected the data. The data was interpreted by applying statistical methods.

This chapter deals with the conclusion. The conclusions, were drawn on the basis of the findings of the study, they are as follows.

- The most of mothers carry out appropriate care for their babies vaccinated with BCG vaccine. (good practices are carried out by 88% mothers)
- The wrong practices found were application of cold fomentation, oil application, massage, sandalwood application, etc.
- The majority of the respondents did know about the importance of BCG vaccine, which is administered to prevent tuberculosis.

(Only 6% respondents knew that BCG is given to prevent T.B.)

- The majority of children did not develop papule. (60% children had not developed papule)

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APPENDIX

Tool for Research data collection:

TOOL: INTERVIEW SCHEDULE

Objective:

- ❖ To know the demographic data of the sample.
- ❖ To assess the knowledge regarding vaccination.
- ❖ To assess the knowledge regarding BCG vaccination.
- ❖ To find out the practices adopted by the mothers carried out for their babies vaccinated with BCG.

Instructions for administration of the tool:

- 1) The tool will be administered on the mothers at the first contact after she consents to participate in the study.
- 2) Principles of interviewing techniques will be kept in mind by the investigator while administering this tool.
- 3) The investigator will read the stem of the question along the options, the investigator will instruct the respondent to choose one option of the options provided and will score it in the tool

Sample No.:-

Section A: - DEMOGRAPHIC DATA

1) Age of the mother

- a) 15 years to 20 years
- b) 21 years to 25 years
- c) 26 years to 30 years
- d) Above 30 years

2) Education of the mothers

- a) Primary
- b) Secondary
- c) Higher secondary
- d) Graduate and above
- e) No formal education

3) Area of residence

- a) Slum / zopada
- b) Chawl
- c) Building
- d) Bungalow

4) No. of children

- a) One
- b) Two
- c) Three
- d) More than three

5) Type of family

- a) Nuclear family
- b) Joint family

6) Place of delivery

- a) Government hospital
- b) Private hospital
- c) Home

7) Gender of the child

- a) Male
- b) Female

8) Religion of mother

- a) Hindu
- b) Muslim
- c) Christian
- d) Others

Section B-1:- Knowledge of mothers regarding vaccination.

- 1) What is the importance of giving vaccination to children
 - a) To prevent the disease for which vaccine is given
 - b) For growth and development of the baby
 - c) To prolong the life of the baby
 - d) Don't know

- 2) Which vaccine is given at birth
 - a) BCG and Polio
 - b) DPT
 - c) Measles
 - d) Don't know

- 3) After vaccination if child develops fever, what medicine to be administered?
 - a) Medicine for cough
 - b) Medicine for fever
 - c) Medicine for diarrhea
 - d) Don't know

Section B-2: Knowledge of mothers regarding BCG vaccination.

- 1) At what age should the child receive BCG vaccine?
 - a) At 2 years of age
 - b) At 5 years of age
 - c) From birth to 6 weeks of age
 - d) Don't know

- 2) Why is BCG vaccination given to the child?
 - a) To prevent malaria
 - b) To prevent polio
 - c) To prevent tuberculosis
 - d) Don't know

- 3) On which site BCG vaccination is given?
 - a) Thigh
 - b) Buttocks
 - c) Left upper arm where injections are usually given
 - d) Other sites

Section B-3: To find out practices adopted by the mothers for their babies vaccinated with BCG.

- 1) After the vaccination of BCG how did you take care of the local site?
 - a) Massaged the area with oil
 - b) Applied home remedies- ice, turmeric, sandalwood, herbs, skin cream, oil
 - c) Regularly washed the site while bathing the baby and kept it dry
 - d) Any others

- 2) If you have applied any of the above when did you start the application?
 - a) Day 1 to 2nd week (specify)_____
 - b) 2nd week + 1 day to 4th week (specify)_____
 - c) 4th week + 1 day to 6th week (specify)_____
 - d) 6th week + 1 day to 8th week (specify)_____

- 3) If you have applied any of the above for how many days did you continue the application?
 - a) 1 day
 - b) 2 day
 - c) 3 to 7 days
 - d) More than 1 week

4) What changes did you observe at the local site within a month's time of receiving the BCG vaccination?

- a) Erythema
- b) Blackening at the site
- c) Both a) and b)
- d) None

5) What changes did you observe at the local site after a months' time of receiving the BCG vaccination?

- a) Development of papule which broke into an ulcer
- b) Development of papule
- c) Development of an ulcer and / or pus
- d) None of the above

**** Instruction:-**

Ask the next question only if the mother report of having ulceration at the local site.

6) What care did you give to your baby after the development of ulcer at the local site?

- a) No care
- b) Dressing
- c) Application of home remedies
- d) Consulted with the doctor.