

# Assessing the Impact of a Structured Immunization Education Program on Knowledge and Attitudes Among New and Expecting Mothers in Bengaluru, India: A Quasi-Experimental Design

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**Abstract:** Introduction: Immunization is vital; it protects nearly 3/4th of children against major Childhood illness. There are several diseases, which can be easily prevented by timely Vaccination as a part of routine immunization. Every child has the right to benefit from the appropriate traditional and new life saving vaccinations. All mothers wish Good health for their children. Health workers desire all children immunized against Vaccine preventable diseases. The government wants them protected from progressive Diseases. But many vaccines do not reach a majority of infants and children. Decreased awareness, patient compliance and cost effectiveness play a major role in Limiting the success of vaccine. Children are innocent, trusting and full of hope.<sup>1</sup> Aim of the study: To evaluate the effectiveness of structured teaching program on knowledge And attitude regarding immunization among mothers of under five children in Term of gain in post test knowledge and attitude score. Material and methods: Purposive sampling technique was used. Sample size of this study consists of 30 mothers of under five children living in selected community area at. Marenahalli. The investigator developed a questionnaire and likert scale to assess the attitude of mother with under five children. Results: Regarding Age of the mother, maximum 15 (50%) mothers were between the ages of 24-28. Regarding Religion, maximum 17 (56.66%) mothers were Hindu. Regarding education of the mother, maximum 9(30%) mothers were completed primary education, 8(26.66%) mothers had no formal education. Regarding source of information, maximum 8(26.66%) mothers were got the information through the radio. In pre test, the majority of the mothers 16(53.33%) had inadequate knowledge regarding immunization. In post test, the majority mothers 25(83.33%) had moderate knowledge regarding immunization. In pre test, the majority of the mothers 19(63.33%) had poor attitude regarding immunization. In post test, the majority mothers 24(80%) had average attitude regarding immunization. While comparing the pre test (mean score 11.16) knowledge score regarding immunization most of the mothers were scored more in the post test (mean score 14.2). While comparing the pre test (mean score 14.6) attitude score regarding immunization most of the mothers were scored more in the post test (mean score 17.4). There is significant association between knowledge and age of the mother and occupation of the mother. But there was no association between religion, education and source of information with the post test knowledge score. -There is significant association between attitude and age of the mother and occupation of the mother. But there was no association between religion, education and source of information with the post test attitude score.

**Keywords:** Immunization, effectiveness, Knowledge, attitude, Likert scale

## 1. Introduction

Vaccination is probably one of the most cost-effective interventions to reduce the burden of childhood morbidity and mortality, currently it is estimated that immunization saves the life of 3 million Children in a year but 2 million more lives could be saved by existing vaccines. Vaccination is a cornerstone of public health, believed to save an estimated 2-3 Million lives annually.<sup>2</sup>

Vaccine is an immunological substance designed to confer specific protection Against a given disease. It stimulates immune system (either humoral or cell mediated) To generate specific protection against an infectious agent. Vaccine may be prepared from live modified organisms, inactivated or killed organisms, toxoids, or combination of these. The immune system protects an individual against invasion by foreign bodies, specifically Microbial agents and their toxic products.<sup>3</sup>

Immunization is vital it protects nearly 3/4th of children against major childhood illness. There are several diseases, which can be easily prevented by timely vaccination as a part of routine immunization. Every child has the right to benefit from the suitable traditional and new life saving vaccinations. All mothers wish good health for their children. Health workers desire all children to be immunized against vaccine preventable diseases. The government wants them free from progressive diseases.<sup>4</sup>

In 2006-2007 the UNICEF reported that measles vaccine coverage was 90.4% and tetanus immunization. So far, the new vaccination for hepatitis B and encephalitis coverage was less reported. The lapse in vaccination coverage is due to lack of knowledge about the vaccine preventable diseases and its complications<sup>5</sup>

A study was conducted to assess the attitudes of parents of vaccinated and unvaccinated children regarding; support for immunization registries. A case control study of parents of

815 children exempt from school vaccination requirements and 1630 fully vaccinated children was conducted. Surveys administered to the parents and were asked about views on registries and perceived utility and safety of vaccines. The results of the surveys were completed by 56.1% of respondents, fewer than 10% of parents were aware of immunization registries on their communities.<sup>6</sup>

Mathew JL, et al., (2002) had conducted study on 500 children under the age of 5 years belonging to a low-income group. All were attending the pediatrics outpatient department of a large teaching hospital in New Delhi, India. Only 25% were found to have received complete primary immunization as per the National Immunization schedule (bacilli Calmette - Guérin at birth, 3 doses of diphtheria, pertussis and tetanus and oral poliovirus vaccine at 6, 10 and 14 weeks and measles at 9 months). The major reasons for non-immunization of the children were migration to a native village (26.4%), domestic problems (9.6%).

The immunization center was located too far from their home (9.6%) and for child was unwell when the vaccination was due (9%). The lack of awareness and fear of side effects constituted a small minority of reasons for non-immunization.<sup>7</sup>

Any health program utilization depends on beneficiaries, so in case of child completing the immunization also depends on the parents. Guided by the above stated reviews and observing the community health status the researchers were motivated to select the present study.

#### Objectives of the Study:

- 1) To assess the Pretest level of knowledge and attitude regarding the Immunization among mothers of under five children as measured by Structured knowledge questionnaire and attitude scale.
- 2) To assess the post test level knowledge and of attitude regarding Immunization among mothers of under five children as measured by Structured knowledge questionnaire attitude scale.
- 3) To evaluate the effectiveness of structured teaching program on knowledge And attitude regarding immunization among mothers of under five children in Term of gain in post test knowledge and attitude score.
- 4) To find the co relation between the knowledge and attitude regarding Immunization among the mother of under five children.
- 5) To find out the association between post test level of knowledge with their Selected demographic variables.
- 6) To find out the association between post test level of attitude with their Selected demographic variables.

#### Hypotheses:

H1: The mean post test knowledge score is higher than the mean pre test Knowledge score regarding immunization among the mothers of under five Children.

H2: The mean post test attitude score is higher than the mean pre test attitude Score regarding immunization among the mothers of under five children.

H3: There will be significant relationship between knowledge and attitude Regarding immunization among the mothers of under five children.

H4: There will be no significant association between the post test knowledge Scores of mothers regarding immunization and selected demographic variables.

H5: There will be no significant association between the post test attitude scores of mothers regarding immunization and selected demographic variables.

#### Assumptions:

- The post test score will be higher than the pre test score.
- Under five children's mother will not have adequate knowledge and attitude Regarding immunization.
- Demographic variable of the sample may have an influence over knowledge And attitude regarding immunization.

#### Conceptual Framework

The conceptual framework for this study was derived from general system Model given by Von Ludwig Bertalanffy 1968. According to this theory, a system is Asset of components or unites inter acting with each other with in a boundary that Filters the type and rat of exchange with the environment. All living systems are Open in that there is a continual exchange of matters and information. In open System there are varying degree interaction with the environment from which the System receives input and gives back output in the form of matt energy and information.

## 2. Material and Methods

The research design used in this study was quasi experimental one group pre test post test design is used to determine the effectiveness of structured teaching programme on knowledge and attitude regarding immunization before and after the structured teaching programme among mothers of under five children. Sample size of this study consists of 30 mothers of under five children living in selected community area at. Marenahalli. Purposive sampling technique was used to select the sample.

The tool was developed by the investigator to assess the knowledge and attitude of the mothers of under five children regarding immunization. The test retest was used to establish a reliability of structure questionnaire and attitude scale. Reliability value  $r = 0.7$  was satisfactory.

The tool consisted of three sections.

**Section-A:** Demographic variables of the mother The demographic data consisted of baseline information of mothers of under five children regarding their age, religion, education, occupation, source of information about obligatory vaccination.

**Section-B:** It consists of knowledge questionnaire on immunization; number of items was 30 questions. The total score for the entire item was 30.

**Section-C:** 3 point likert scale to assess the attitude of mother with under five children. The number of item was 15. The total score for the entire item was 40. The data was collected by using Knowledge questionnaire and attitude scale in order to identify the knowledge and attitude of

immunization among the mothers of under five children in selected rural area at Marenahalli. First week survey was conducted to identify the under five children mothers in selected area. Each week 15 subjects was planned to conduct pre test and the structured intervention was given to the mothers. After one week post test was conducted to the mothers 15/week.

### 3. Results

**Table showing the pre-test and post-test knowledge scores of mothers regarding immunization (n=30)**

| Level of Knowledge            | Pre test  |        | Post Test |       |
|-------------------------------|-----------|--------|-----------|-------|
|                               | Frequency | %      | Frequency | %     |
| Adequate Knowledge            | 0         | 0      | 4         | 13.33 |
| Moderately Adequate Knowledge | 14        | 46.66% | 25        | 83.33 |
| Inadequate Knowledge          | 16        | 53.33% | 1         | 3.33  |

**Table showing the pre-test and post-test attitude scores of mothers regarding immunization**

| Level of Attitude | Pre-test  |       | Post-test |       |
|-------------------|-----------|-------|-----------|-------|
|                   | Frequency | %     | Frequency | %     |
| Good              | 5         | 16.66 | 5         | 16.66 |
| Average           | 6         | 20    | 24        | 80    |
| Poor              | 19        | 63.3  | 1         | 3.33  |

**Table: Comparison of the pretest and posttest knowledge score on mothers regarding immunization**

| Knowledge score | Mean  | SD   | 't' Test Value |
|-----------------|-------|------|----------------|
| Pre-test        | 11.16 | 3.42 | 7.65           |
| Post-test       | 14.2  | 3.37 |                |

**Table: Comparison of the pretest and posttest attitude score on mothers regarding immunization**

| Knowledge score | Mean | SD   | 'T' Test Value |
|-----------------|------|------|----------------|
| Pre test        | 14.6 | 4.2  | 6.46           |
| Post test       | 17.4 | 3.25 |                |

**Table showing association between the post test knowledge score on mothers regarding Immunization and demographic variables**

| Demographic variable  | Frequency | Knowledge level |                     |          | Chi square X <sup>2</sup> |
|-----------------------|-----------|-----------------|---------------------|----------|---------------------------|
|                       |           | Inadequate      | Moderately Adequate | Adequate |                           |
| Age of the mother     |           |                 |                     |          | 11.50*                    |
| 18-23                 | 30        | 1               | 2                   | 0        |                           |
| 24-28                 |           | -               | 14                  | 1        |                           |
| 29-33                 |           | -               | 9                   | 3        |                           |
| Occupation            |           |                 |                     |          | 7.58*                     |
| Not Employed          | 30        | 1               | 2                   | 1        |                           |
| Employed              |           | -               | 23                  | 3        |                           |
| Education             |           |                 |                     |          | 8.70*                     |
| Illiterate            | 30        | -               | 8                   | 0        |                           |
| Primary Education     |           | 1               | 5                   | 3        |                           |
| Secondary Education   |           | -               | 5                   | -        |                           |
| Under graduate        |           | -               | 4                   | 1        |                           |
| Post graduate         |           | -               | 3                   | -        |                           |
| Religion              |           |                 |                     |          | 0.99*                     |
| Hindu                 | 30        | 1               | 14                  | 2        |                           |
| Muslim                |           | -               | 7                   | 1        |                           |
| Christians            |           | -               | 4                   | 1        |                           |
| Others                |           | -               | -                   | -        |                           |
| Source of information |           |                 |                     |          | 10.07*                    |
| TV                    | 30        | -               | 4                   | 1        |                           |
| Radio                 |           | -               | 8                   | -        |                           |
| News paper            |           | -               | 3                   | 1        |                           |
| Neighbors             |           | -               | 3                   | 2        |                           |
| Health Center         |           | 1               | 5                   | -        |                           |
| Health card           |           | -               | 2                   | -        |                           |

**Association between the Post test attitude scores on Mothers regarding Immunization and Demographic variables**

| Demographic variable | Frequency | Knowledge level |                     |          | Chi square X <sup>2</sup> |
|----------------------|-----------|-----------------|---------------------|----------|---------------------------|
|                      |           | Inadequate      | Moderately Adequate | Adequate |                           |
| Age of the mother    |           |                 |                     |          | 11.9*                     |
| 18-23                | 30        | 1               | 1                   | 1        |                           |
| 24-28                |           | -               | 14                  | 1        |                           |
| 29-33                |           | -               | 9                   | 3        |                           |
| Occupation           |           |                 |                     |          | 13.03*                    |
| Not Employed         | 30        | 1               | 2                   | 2        |                           |
| Employed             |           | -               | 23                  | 3        |                           |
| Education            |           |                 |                     |          | 7.98*                     |
| Illiterate           | 30        | -               | 6                   | 1        |                           |
| Primary Education    |           | 1               | 9                   | -        |                           |
| Secondary Education  |           | -               | 4                   | 1        |                           |
| Under graduate       |           | -               | 3                   | 2        |                           |
| Post graduate        |           | -               | 3                   | -        |                           |

| Religion              |    |   |    |   |       |
|-----------------------|----|---|----|---|-------|
| Hindu                 | 30 | 1 | 13 | 3 | 0.99* |
| Muslim                |    | - | 7  | 1 |       |
| Christians            |    | - | 4  | 1 |       |
| Others                |    | - | -  | - |       |
| Source of information |    |   |    |   |       |
| TV                    | 30 | - | 4  | 1 | 5.85* |
| Radio                 |    | - | 6  | 2 |       |
| News paper            |    | - | 4  | 0 |       |
| Neighbors             |    | - | 4  | 1 |       |
| Health Center         |    | 1 | 4  | 1 |       |
| Health card           |    | - | 2  | - |       |

#### 4. Discussion

In pre test, the majority of the mothers 16(53.33%) had inadequate knowledge regarding immunization. In post test, the majority mothers 25(83.33%) had moderate knowledge regarding immunization. In pre test, the majority of the mothers 19(63.33%) had poor attitude regarding immunization. In post test, the majority mothers 24(80%) had average attitude regarding immunization. While comparing the pre test (mean score 11.16) knowledge score regarding immunization most of the mothers were scored more in the post test (mean score 14.2). While comparing the pre test (mean score 14.6) attitude score regarding immunization most of the mothers scored more in the post test (mean score 17.4). There was significant association between knowledge and age of the mother, occupation of the mother. There is significant association between attitude and age of the mother, occupation of the mother.

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#### Conflict of Interest

Researcher does not have any Conflict of Interest

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