

# A Descriptive Study to Assess Effectiveness of Health Literacy on Knowledge Regarding Torch Infection During Pregnancy Among Antenatal Mother in A Selected Phc, Puducherry

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Received: 04-08-2025; Revised: 05-09-2025; Accepted: 17-10-2025; Published: 30-11-2025

## Abstract

*Body Integrity Identity Disorder (BIID) is a rare and complicated disorder related to the individuals who feel a ORCH infections including Toxoplasmosis, Other infections, Rubella, Cytomegaloviruses and Herpes simplex are major maternal infections that may cause severe fetal outcomes, such as congenital malformations, intra-uterine growth retardation, and neurodevelopmental issues in the long-term. Although they have an effect, there are a lot of pregnant women who are not aware about these infections and how they can affect them. Health literacy, which has been described as the capacity to obtain, comprehend, and implement health-related information, is a very important factor in enhancing maternal knowledge and the development of preventive measures. This research was conducted to determine the efficiency of a health literacy program on enhancing knowledge on TORCH infection among antenatal mothers at one of the selected Primary Health Centres (PHC) in Puducherry. One-group pre-test and post-test research design design was used, where 51 antenatal mothers were recruited using the convenience sampling method. The data was collected based on a structured instrument that had demographic information and a standardized knowledge test. The pre and post intervention levels of knowledge were compared and assessed with descriptive and inferential statistics. The results showed that during the pre-test, 92.2% of the participants showed a poor level of knowledge, 7.8% moderately knowledgeable, and 0 showed adequate knowledge. The outcome of the post-intervention revealed an impressive improvement since only 3.9% were still inadequate, 56.9% achieved moderate knowledge, and 39.2% reached an adequate level of knowledge. This increase was found significant ( $p < 0.001$ ). This research established that health literacy interventions are able to make a significant contribution to maternal knowledge of TORCH infections and thus improve mother and neonatal health outcomes.*

**Keywords:** *One group pre-test and post-test, knowledge, TORCH infection, Antenatal mothers in PHC, Puducherry.*

## 1.Introduction

Health literacy has a critical part in enhancing health outcomes particularly in the case of people who are vulnerable like pregnant women. The World Health Organization (WHO) states that health literacy is one of the determinants of health because it allows people to successfully move through the healthcare systems, comprehend medical information, and engage in preventive measures. In the case of expectant mothers, it is essential to have proper health literacy levels in order to identify and avoid any possible maternal and fetal health risks. Infection is one of the greatest issues in pregnancy where serious problems may arise including preterm birth, congenital anomalies, developmental delays as well as still births(1).

## 2.Methodology

### 2.1 Research Design

- Type: The study adopted a pre-experimental pre-test and post-test design of one-group.
- Setting: The research was carried out in one of the selected Primary Health Centre (PHC) located in Bahour, Puducherry(2).

### 2.2 Participants

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- Sample: The research involved antenatal mothers aged 21-35years who were taking care of the chosen PHC.
- Inclusion Criteria:
- PHC antenatal mothers.
- Mothers who were there during the data collection.
- Mothers who would agree to take part in the study.
- Mothers who were able to learn Tamil.

### Tool for Data Collection

#### Question 1: Sociodemographic Variables.

- Data on demographic factors, such as age, education, religion, both parent occupation, place of residence, family type, family monthly income and major sources of health information were collected in this section.
- This section involves the use of a self-administered questionnaire(3).
- This part was a 20-item structured questionnaire, which investigators designed to evaluate the knowledge about TORCH infections.
- Scoring The marker was given one mark to a correct answer and zero to incorrect answer. The highest possible score was 20.

### 2.3 Data Analysis

Descriptive Statistics: To summarize the data Mean and standard deviation were computed.

Inferential Statistics: Paired t-test was conducted to compare opting results of pre-test and post-test knowledge and chi-square test was conducted to reflect the associations between demographic factors and levels of knowledge.

## 3.Results and Discussion

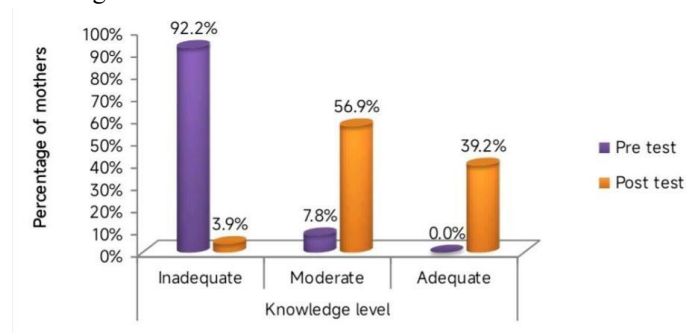
- In this chapter, the discussion is provided by the findings of the statistical analysis and how they will be relevant to the study objectives.
- The study adopted a research approach of quantitative research design to determine the pre-test knowledge of TORCH infection amongst antenatal mothers(4).
- The study selected 51 participants and used a self-structured questionnaire that was developed to measure the objectives of the study. All participants were well informed about the purpose of the research and the data collection procedure and informed consent was obtained before the research.

### 3.1 The Analysis of The Study Findings Were Discussed Below the Following Headings

- To determine the pre-test and post-test level of knowledge on TORCH infection among the antenatal mothers.
- To determine the efficiency of a health literacy program to enhance the knowledge of TORCH infections among antenatal mothers.
- To establish the correlation between pre-test knowledge scores and demographical variables that had been previously selected among antenatal mothers.

### 3.2 Knowledge Assessment of Antenatal Mothers (Pre-Test & Post Test)

Figure 1 states that the knowledge level of antenatal mothers and it's shows that number of mothers in



**FIGURE 1** Frequency and distribution of samples based on knowledge level PRETEST- Inadequate are 47(92.2%), Moderate are 4(7.8%), Adequate are 0(0.0%).

POSTTEST- Inadequate are 2(3.9%), Moderate are 29(56.9%), Adequate are 20(39.2%).

### Section 3: Effectiveness of the Structured Teaching Programme on Knowledge Regarding TORCH Infections Among Antenatal Mothers

Figure 1 states that knowledge score of antenatal mothers and it's shows that number of mothers is  $p < 0.001$ .

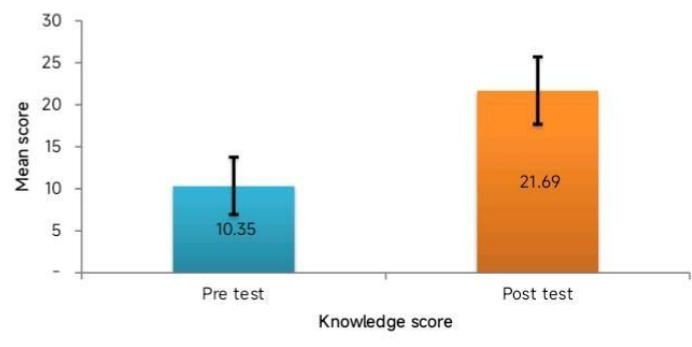


FIGURE 2 Frequency and distribution of samples based on knowledge score

### Section 4: Association Between Selected Demographic Variables Among Mother with Knowledge Regarding Torch Infection

TABLE 1 Association between knowledge of mother regarding TORCH infection

Demo		N	Knowledge score					MW/KW test	p-value
			Mean	SD	Median	Percentile 25	Percentile 75		
Age	20years	7	12.00	2.24	13	10	14	5.941	0.051
	25years	15	11.00	4.28	10	9	14		
	28years	29	9.62	3.03	8	8	12		
Educational of the mother	Profession	5	7.20	2.17	8	5	8	14.958	0.011
	Graduate or Post graduate	24	11.71	3.69	11	8	14		
	Intermediate or Post high School	5	11.80	2.28	12	12	13		
	High School	8	8.88	2.53	8.5	8	9.5		
	Middle School	6	10.17	2.04	10	9	10		
Primary School	3	6.67	1.15	6	6	8			
Religion	Hindu	38	10.87	3.57	10	8	14	2.532	0.282
	Christian	7	8.57	3.21	9	5	10		
	Muslim	6	9.17	1.33	9	8	10		
Family Income	≥2000	4	8.50	3.32	8	6.5	10.5	16.273	0.012
	1000- 1999	2	12.00	0.00	12	12	12		
	500-749	11	7.80	1.03	8	8	8		
	300-499	6	9.67	1.21	9.5	9	11		
	101-299	16	11.75	2.96	10	10	14		
	≤100	12	11.58	4.81	12.5	8	14		
Type of dietary pattern	Vegetarian	11	10.09	2.21	9	8	13	7.735	0.021
	Non vegetarian	10	7.90	1.85	8	8	8		
	Both veg and non-veg	30	11.27	3.80	10.5	8	14		

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Number of pregnancies	First pregnancy (Primimother)	18	12.67	3.31	13	10	14	18.612	0.000
	More than one pregnancy (Multi para)	19	8.21	2.15	8	7	9		
	First pregnancy at the age above 35 (Elderly primi)	9	10.56	4.00	8	8	13		
	5 or more than 5 Pregnancy (Grand multipara)	5	9.80	0.45	10	10	10		
Antenatal visit	Regular	40	10.77	3.72	10	8	14	2.349	0.125
	Irregular	11	8.82	0.98	8	8	10		
Gestational weeks	12 – 20 weeks	20	10.80	3.98	10.5	8	13	0.614	0.893
	22 – 30 weeks	23	10.17	3.50	9	8	14		
	32 - 34 weeks	4	10.25	0.50	10	10	10.5		
	36 – 38 weeks	4	9.25	0.96	9.5	8.5	10		
Source of information	Social media	9	10.33	4.44	8	8	14	15.223	0.002
	Peer group	9	8.56	2.19	8	8	10		
	Health team members	9	7.89	1.90	8	8	9		
	None of the above	24	11.96	3.04	12	10	14		
History of TORCH infection	Yes	1	10.00	--	10	10	10	0.043	0.836
	No	50	10.36	3.45	9.5	8	13		

The knowledge regarding TORCH infection among mothers was statistically related to the multiple demographic factors such as age, education, religion, family income, dietary pattern, number of pregnancies, number of antenatal visits, gestational weeks, source of information and history of TORCH infection(5). The chi-square results were as follows age of mother ( $X^2 = 5.941$ ), education of mother ( $X^2 = 14.958$ ), religion ( $X^2 = 2.532$ ), family income ( $X^2 = 16.273$ ), dietary pattern ( $X^2 = 7.735$ ), number of pregnancies ( $X^2 = 18.612$ ), antenatal visits ( $X^2 = 2.349$ ), gestational weeks ( $X^2 = 0.614$ ). These results proved to be significant at  $p < 0.001$ .

#### 4. Overview

The current research sought to assess the impact of the health literacy interventions on the knowledge about TORCH infections during pregnancy among the antenatal mothers visiting a Primary Health Centre (PHC) in Bahour, Puducherry. Fifty-one antenatal mothers were chosen by convenience sampling. A structured tool was used to gather the data; the tool included two sections- Section A based on demographic variables and Section B a knowledge questionnaire based on TORCH infections.

#### Nursing Implications

This paper has shown that it is critical to measure and enhance the knowledge about TORCH infections and their prevention in pregnant women. The results are important to nursing service, nursing education, nursing administration and nursing research. The findings could inform the nursing practitioners in risk-factor identification, prevention strategies and awareness creation on the TORCH infections. Moreover, the insights can facilitate the early detection and diagnosis of the TORCH-related complications in expectant mothers, which, in the end, will improve the neonatal and maternal health outcomes(6).

#### Nursing Education

Nurses should be well-informed on matters of maternal health in order to give holistic care to the pregnant women. A profound knowledge of TORCH infections will make nurses capable of educating and motivating pregnant mothers about the prevention and management of them. The results obtained in this research underline the necessity to include the recent data on TORCH infections in the nursing curriculum, short-term educational

courses, and the in-service training programs. To ensure that pregnant women adopt preventive measures, nurse educators must provide opportunities that allow pregnant women to acquire knowledge on TORCH infections via health education, interactive programs and counseling.

### Limitations of The Study

This study was limited to:

- N= 51 pregnant women.
- Individuals that visit the antenatal outpatient department (OPD) of Bahour PHC.
- Venus flytraps and arthropods that volunteered to participate in the experiment.
- Knowledge only, no practices or attitudes are assessed.

### Recommendations

- In light of the results of this research, the following recommendations can be proposed to future research:
- Perform a similar study with a control group to more rigorously define the effectiveness of health literacy interventions(7).
- Conduct descriptive research to identify the level of knowledge of pregnant women on TORCH infections in different healthcare institutions.
- Duplicate the research in other PHCs or larger and more diverse hospitals to increase the generalizability.
- Widen the scope to capture practices and attitudes, besides knowledge, so as to have a full picture of maternal awareness and behavior.

## 5.Conclusion

We aimed to research the effectiveness of health literacy in the enhancement of knowledge regarding TORCH infections in pregnancy in the context of antenatal mothers. Torch infections are a big threat to the well being of both the mother and the unborn baby. The results of the study found that after the intervention, 3.9% of the participants did not have appropriate knowledge, 56.9% had moderate knowledge, and 39.2% of them had adequate knowledge of TORCH infections. These findings suggest that most of the respondents achieved moderate level of knowledge, which denotes the beneficial role of health literacy intervention in increasing awareness and prevention of TORCH infections during pregnancy.

**Acknowledgement:** Nil

### Conflicts of interest

The authors have no conflicts of interest to declare

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