Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 47 No. 03 (2026)

A Study to Assess the Effect of Health Teaching on Knowledge Regarding Prevention of Torch Infection During Pregnancy among Antenatal Mothers in Selected Rural Area.

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Abstract:

Background: The maternal infections that are transmissible in utero at several stages of the pregnancy and it can be caused by many organism of which the members of the TORCH complex, namely Toxoplasma Gondi, Rubella, Cytomegalovirus (CMV), the Herpes simplex virus (HSV) 2 occupy prominent position.

Objectives: To assess the effect of health teaching on knowledge regarding prevention of torch infection during pregnancy among antenatal mothers in selected rural area.

Method: Quantitative Research Approach was used. One group pre-test post-test pre-experimental research design was adopted. Independent variable: health teaching program regarding prevention of TORCH infection Dependent variable: knowledge regarding prevention of TORCH infection. The setting of the study was selected rural area. The population of the study was antenatal mothers residing in selected rural area. Sample size of the study 100 antenatal mothers residing in selected rural area. Non-probability purposive sampling technique was adopted for this study. Tool and technique of data collection was divided into two sections. **Section A:** Structured questionnaire on demographic variables such as Age, Educational status, occupation, gravida (No. of pregnancy), gestational age (in weeks), source of information about TORCH infection, previous history. **Section B:** Structured knowledge questionnaire to assess the level of knowledge regarding prevention of TORCH infection among antenatal mothers in selected rural area.

Result: The result of the study showed that the in pre-test 29 % of the Antenatal mothers had poor level of knowledge score, 54 % had average level of knowledge score. In post-test 51 % of the Antenatal mothers had good level of knowledge score and 45 % had excellent level of knowledge score.

Conclusion: The knowledge score of the Antenatal mother's shows marked improvement after giving Health teaching.

Keywords: Assess, Effect, Health Teaching, Prevention of TORCH Infection, Pregnancy, Antenatal Mothers.

Introduction

"Every pregnant woman has the right to information that will enable her to safeguard her own health and that of her unborn child."

— World Health Organization

Pregnancy is the most fascinating and delicate experience for a every women. Not only the health of the baby in the womb but also the woman's health is of equal importance to all her friends, well-wishers as well as family members. Every pregnancy is a unique experience; experiences will be new and uniquely different for the women.[1]

Pregnancy is biologically, physiologically and psychologically stressful, even for healthy women. Problems like, bleeding hyperemesis gravidarum, Hypertensive disorders, Anaemia, Diabetes Mellitus, Preventive measures of UTI in pregnancy, infections like toxoplasmosis, rubella, group B streptococcus, urinary tract infection , TORCH infection etc. will complicate the pregnancy.[2]

The World Health Organization (WHO) implemented various strategies to eliminate preventable maternal and neonatal morbidity and mortality globally as well as locally. By 2030, improving maternal and child health will serve as a foundation for governments, communities, and families. [3]

One of the significant causes of neonatal and maternal mortality and morbidity globally is infection during various stages of pregnancy triggered by multiple pathogens, including the TORCH complex. These infections significantly contribute to worldwide neonatal and infant mortality rates; they mostly result in mild to asymptomatic maternal morbidity. However, a significant influence on new-born outcomes was reported, with a spectrum of adverse outcomes such as restricted intrauterine growth (IUGR), congenital anomalies with varying degrees of long-term sequelae, and foetal death. [3]

In India, pregnant women belonging to low socio-economic group may be exposed to a variety of infection due to many reasons in that include poor environment and hygiene. Maternal infection because of Toxoplasma, Rubella, CMV, and HSV has been considered as significant factors for poor pregnancy. [4]

Torch classification includes T-Toxoplasmosis, O- Others (syphilis parvovirus HIV), R- Rubella, C-Cytomegalovirus, H- Herpes simplex virus. **TOXOPLASMOSIS**: It is a virulence of fetal infection is greatest, when maternal infection is acquired early in pregnancy. The affected baby may develop hydrocephalus, cerebral calcification, macro cephalic and mental retardation. **SYPHILIS-**Syphilis infection is caused by the spirochete treponema palladium and it transmitted by sexual contact or by the maternal fetal transmission. The infant may contract the disease through the placenta (or) from the birth canal; there are 50% chances of a mother with primary (or) secondary syphilis infecting her fetus during pregnancy. **RUBELLA-** Rubella (or) germen measles virus causes mild and insignificant illness present in the mother, but can have serious consequences for the fetus. The virus is transmitted by the respiratory droplet exposure. Fetal affection is Tran placental route throughout pregnancy. Risk of major Anomalies is about 80% infection occurs in the first 12 week of pregnancy. Early infection may cause spontaneous abortion. The mother may also be advised termination of pregnancy. **CYTOMEGALO VIRUS INFECTION**-Cytomegalovirus and the herpes also that is harboured in leukocytes and transmitted by the saliva, semen, urine, cervical secretion and blood. Transmission may also occur by respiratory droplet (or) Tran placental route in about 30%-40% of cases. **HERPES SIMPLEX VIRUS-** Infection with herpes simplex virus (HSV) is associated with most commonly in genital herpes in the mother. Neonatal infection is more likely with a primary maternal infection during pregnancy which results in high morbidity and mortality. The infection may be acquired through the placenta (or) from an infected birth canal. The risk of intrapartum infection is about 50% when the mother has primary genital herpes lesion at the time of birth. [5]

The disease burden is maximum in low to middle income or socioeconomic countries. Given the availability of treatment and prevention strategies for most of these infections women's, early recognition, including prenatal serological screening, is crucial. [6]

Consequently, as the pathogen list continues to evolve, conducting preconception TORCH screening and risk assessment, providing health education for women of childbearing age, and facilitating early treatment or preventive vaccinations have distinct public health significance and social value. [6]

Mrs. Amita Patel conducted study with objectives 1. To evaluate the pre-test knowledge regarding the prevention of the TORCH infection among antenatal mothers. 2. To evaluate the post-test knowledge regarding

the prevention of the TORCH infection among antenatal mothers. 3. To evaluate the effectiveness of structured teaching programme on knowledge regarding the prevention of the TORCH infection among antenatal mothers in terms of gain in knowledge scores. 4. To find out the association of pre-test knowledge scores regarding the prevention of TORCH infection with their selected demographic variables. In this study Quantitative research approach was used with Pre experimental (one group pre-test post-test) research design. The researcher used Non-Probability convenience sampling technique for selection of 40 samples. A structured knowledge questionnaire was used to evaluate effect of structured teaching programme regarding prevention of TORCH infection among antenatal mother. The reliability of the tool was determined, by using test and retest method of "Karl Pearson's formula" co-efficient correlation r=0.96, the tool was found to be reliable. The result of the study showed that the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score with a mean difference of 7.95. The calculated 't' value (19.256) was greater than the tabulated 't' value (2.02) at 0.05 level of significance. Therefore, the null hypothesis H_0 was rejected and research hypothesis H_1 was accepted and it revealed that the structured teaching program was effective in increasing knowledge among antenatal mothers. The findings also revealed that number of pregnancies has significant association with pre-test knowledge score. Hence, the research hypothesis (H2) was accepted. [7]

In India, TORCH infection is largely ignored and the mothers are unaware of its complication. To create awareness of this infection in mothers an information booklet will be useful. It will help to achieve the overall well-being of child and mother. Pregnancy is a condition in which the foetal growth is accompanied by extensive changes in the maternal body composition and metabolism. [8]

Background Of the Study:

Anjna Kumari To assess the knowledge regarding TORCH infection and its prevention among the pregnant women. Design and methods: A Descriptive study design was used for the study. Convenience sampling technique was used to select the samples. 100 Antenatal women were selected for the study-based inclusion criteria. The tool consist of socio demographic characteristics and self-structured questionnaire was administered to collect the data. The data collected was analysed by using descriptive statistics. Result: The result of the study reveals that out of 100 antenatal mothers, 51 (51%) had poor knowledge, 45(45 had average knowledge, 4(4%) mothers had good knowledge regarding TORCH infection and its prevention. Conclusion: The study concluded that 38% had adequate knowledge, and 62% had poor knowledge of regarding TORCH infection. It shows the majority of the sample had poor knowledge of the pregnant women regarding TORCH infection and its prevention. [9]

Problem Statement

"A study to assess the effect of health teaching on knowledge regarding prevention of TORCH infection during pregnancy among antenatal mothers in selected rural area."

Objectives of the Study

1) To identify the level of knowledge regarding prevention of TORCH infection among ANC mothers.
2) To assess the effect of health teaching on knowledge regarding prevention of TORCH infection during pregnancy among ANC mothers.
3) To find out the association between knowledge and selected demographic variables of ANC mothers.

Hypothesis

H_0- There is no difference between pre-test and post-test knowledge scores.
H_1- There is a difference between pre-test and post-test knowledge scores.

Research Methodology:

Research Approach: Quantitative Research Approach.

Research Design: One group pre-test post-test pre-experimental research design.

Variables Of The Study:

1. **Independent variable:** health teaching program regarding prevention of TORCH infection
2. **Dependent variable:** knowledge regarding prevention of TORCH infection

Setting Of the Study: Selected rural area.

Target AND ACCESSIBLE POPULATION: Antenatal mothers residing in selected rural area.

Sample Size: 100 antenatal mothers residing in selected rural area.

Sampling Technique: Non-probability purposive sampling technique.

Sampling Criteria:

Inclusion criteria:

a) Antenatal mothers who were 1st, 2nd ,3rd trimester.
b) Who were primigravida, multigravida, elderly primi, and grand multi para mothers.
c) Who were able to understand Marathi, Hindi and English.

Exclusion criteria:

a) Antenatal mothers who were not present at the time of data collection.
b) Who were not willing to participate in this study.

TOOL AND TECHNIQUE OF DATA COLLECTION:

Section A: Structured questionnaire on demographic variables such as Age, Educational status, occupation, gravida (No. of pregnancy), gestational age (in weeks), source of information about TORCH infection, previous history.

Section B: Structured knowledge questionnaire to assess the level of knowledge regarding prevention of TORCH infection among antenatal mothers in selected rural area.

SR.NO.	GRADING	SCORE
1.	POOR	0-7
2.	AVERAGE	8-14

Data Analysis and Interpretation

SECTION I: Distribution Of Antenatal Mothers With Regards To Demographic Characteristics.

Table 1: Percentage wise distribution of Antenatal mothers according to their age Demographic Characteristics n =100

Age(years)	**No. of Antenatal mothers**	**Percentage (%)**
18–22 years	37	37.00
23–27 years	37	37.00
28–32 years	11	11.00
33 years and above	15	15.00
Educational status	**No. of Antenatal mothers**	**Percentage (%)**
Illiterate	09	09.00
Primary education	38	38.00

Occupation	**No. of Antenatal mothers**	**Percentage (%)**
Housewife	49	49.00
Daily wage worker	19	19.00
Private employee	28	28.00
Government employee	04	04.00
Religion	**No. of Antenatal mothers**	**Percentage (%)**
Hindu	84	84.00
Muslim	07	07.00
Christian	06	06.00
Other	03	03.00
Type of Family	**No. of Antenatal mothers**	**Percentage (%)**
Nuclear family	46	46.00
Joint family	38	38.00
Extended family	12	12.00
Single parent	04	04.00
Monthly family income	**No. of Antenatal mothers**	**Percentage (%)**
Below 10,000	30	30.00
10,001–20,000	36	36.00
20,001–30,000	22	22.00
> 30,000	12	12.00
Gravida (number of pregnancies)	**No. of Antenatal mothers**	**Percentage (%)**
Prim gravida (first pregnancy)	68	68.00
Multigravida (more than one pregnancy)	32	32.00
Gestational age	**No. of Antenatal mothers**	**Percentage (%)**
1–12 weeks	35	35.00
13–24 weeks	23	23.00
25–36 weeks	19	19.00
Above 36 weeks	23	23.00

Source of information	No. of Antenatal mothers	Percentage (%)
Health personnel	39	39.00
Friends/relatives	29	29.00
Mass media (TV, internet, newspaper)	24	24.00
None	08	08.00
Previous history of TORCH infection	**No. of Antenatal mothers**	**Percentage (%)**
Yes	00	00
No	100	100.00

The above table 1 shows that the distribution of Antenatal mothers according to their age shows that 37 % of the Antenatal mothers were in the age group of 18–22 years, 38 % of Antenatal mothers were completed Primary education, Occupation shows that the 49 % of the Antenatal mothers were housewife, Religion shows that the 84 % of the Antenatal mothers were following Hindu religion, Type of Family shows that the 46 % of the Antenatal mothers were living in nuclear family, Monthly family income shows that the 36 % of the Antenatal mothers were having 10,001–20,000 family income, Gravida (number of pregnancies) shows that the 68 % of the Antenatal mothers were having prime gravida, Gestational age shows that the 35 % of the Antenatal mothers were having 1 – 12 weeks of gestation, Source of information shows that the 39 % of the Antenatal mothers were got information regarding prevention of TORCH infection during pregnancy from Health personnel, Previous history of TORCH infection shows that the 100 % of the Antenatal mothers were not having Previous history of TORCH infection.

SECTION II: Assessment Of Knowledge Score Of Prevention Of Torch Infection During Pregnancy Among Antenatal Mothers

Table 2: Assessment of Knowledge score of Antenatal mothers regarding prevention of TORCH infection during pregnancy before giving Health teaching. n=100

Domain	Mean	Standard deviation	Mean percentage
Knowledge score	7.51	2.85	37.55

The above table 2 shows the in pretest mean knowledge score regarding prevention of TORCH infection during pregnancy among Antenatal mothers was 7.51. It indicates that, Antenatal mothers were having average knowledge in pre-test.

Table 3: Assessment of Knowledge score of Antenatal mothers regarding prevention of TORCH infection during pregnancy after giving Health teaching. n =100

Domain	Mean	Standard deviation	Mean percentage
Knowledge score	15.12	2.21	75.60

The above table 3 shows the in posttest mean knowledge score regarding prevention of TORCH infection during pregnancy among Antenatal mothers was 15.12. It indicates that, Antenatal mothers were having excellent knowledge in post-test.

SECTION III: Evaluate The Effectiveness Of Health Teaching On Prevention Of Torch Infection During Pregnancy.

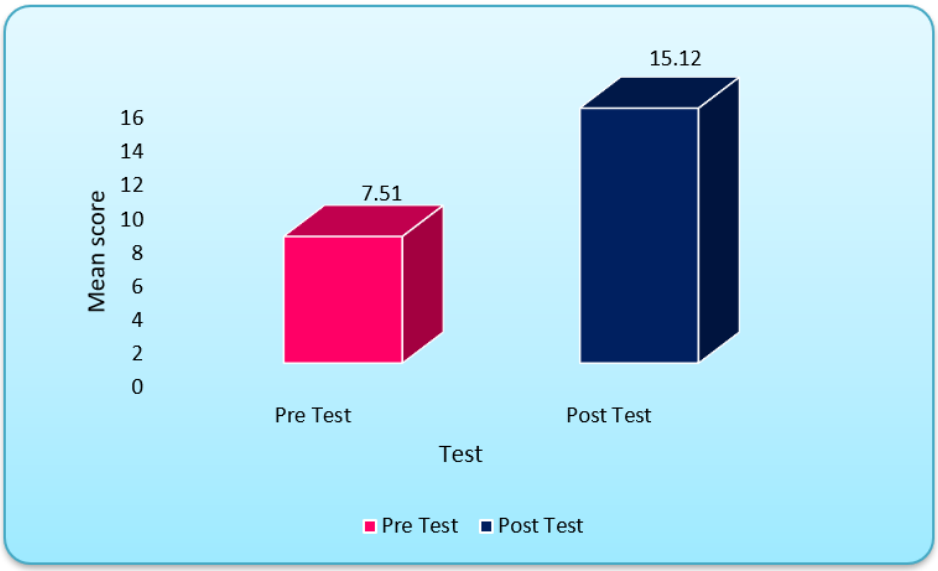

Figure 1: Significance of knowledge score regarding prevention of TORCH infection during pregnancy of Antenatal mothers before and after Health teaching.

The above Fig. No 1 showed that in the pre-test the mean of the knowledge score obtained by the Antenatal mothers was 7.51 and in the post test it rise to 15.12. The knowledge score of the Antenatal mother's shows marked improvement after giving Health teaching.

SECTION IV: Level Of Knowledge Score Of Antenatal Mothers In Pre And Post Test

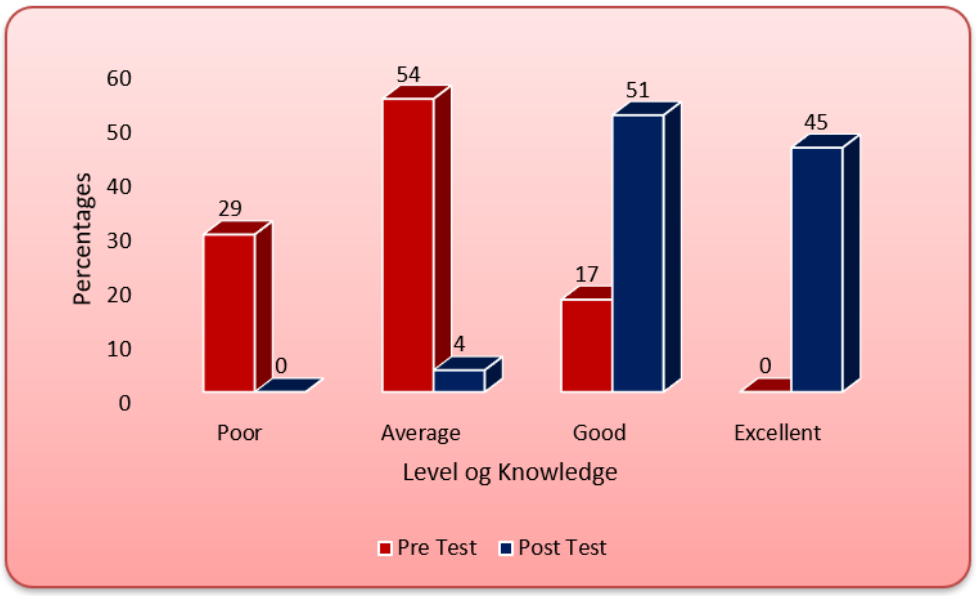

Figure 2: Distribution of Antenatal mothers with regards to general assessment

The above Fig. No 2 shows that, in pre-test 29 % of the Antenatal mothers had poor level of knowledge score, 54 % had average level of knowledge score. In post-test 51 % of the Antenatal mothers had good level of knowledge score and 45 % had excellent level of knowledge score. The difference between pre-test and post-test level of knowledge score was found to be statistically not significant (χ^2-value= 33.64).

SECTION- V: Association Of Knowledge Score Of Antenatal Mothers In Relation To Demographic Variables

Table 4: Significance of difference of Pretest knowledge on prevention of TORCH infection during pregnancy in relation to age. n=100

Age (yrs)	No. of Antenatal mothers	F-value	p-value
18–22 years	37	0.94	0.42 NS, p>0.05
23–27 years	37		
28–32 years	11		
33 years and above	15		
Educational status			
Illiterate	09	1.51	0.21 NS, p>0.05
Primary education	38		
Secondary education	31		
Graduate and above	22		
Occupation			
Housewife	49	1.02	0.38 NS, p>0.05
Daily wage worker	19		
Private employee	28		
Government employee	04		
Religion			
Hindu	84	0.47	0.70 NS, p>0.05
Muslim	07		
Christian	06		
Other	03		
Type of Family			
Nuclear family	46	1.02	0.38 NS, p>0.05
Joint family	38		
Extended family	12		
Single parent	04		
Monthly family income			
Below 10,000	30	2.80	0.04 S, p<0.05
10,001–20,000	36		
20,001–30,000	22		

> 30,000	12		
Gravida (number of pregnancies)			
Primigravida (first pregnancy)	68	0.06	0.80 NS, p>0.05
Multigravida (more than one pregnancy)	32		
Gestational age			
1–12 weeks	35	2.41	0.07 NS, p>0.05
13–24 weeks	23		
25–36 weeks	19		
Above 36 weeks	23		
Source of information			
Health personnel	39	2.22	0.09 NS, p>0.05
Friends/relatives	29		
Mass media (TV, internet, newspaper)	24		
None	08		

In the above-mentioned table by applying one way ANOVA to associate knowledge with demographic variable, in which all p-value was more than 0.05 except monthly family income, hence no significant difference was found in various demographic variables of Antenatal mothers with knowledge.

Discussion

Anju A Thomas conducted study to assess the effectiveness of planned teaching program on knowledge regarding the prevention of TORCH infections among the antenatal mothers visiting the antenatal OPD in selected hospitals Bangalore, India. A quantitative approach was adopted. The design used was pre experimental one group pre-test and post-test research design was used to conduct this study. A non-probability convenient sampling technique was used for generating data from 60 antenatal mothers visiting the antenatal OPD. A self–structured questionnaire was developed to collect data which consisted of 30 questions which emphasizes on the preventive measures against TORCH infections. The result of the study showed that the among the 60 antenatal mothers majority of them 55% had adequate and 45% of them had moderate knowledge regarding the prevention of TORCH infections. This resul showed that the planned teaching programme was effective in improving the knowledge of antenatal women on prevention of TORCH infection. The chi-squire value of the post-test level of knowledge of antenatal women were significant at $p< 0.05$ level. It showed that there was significant association between age, occupation, and birth order with the level of knowledge of antenatal women regarding prevention of TORCH infection. The study concluded that the planned teaching program enhanced the knowledge level of antenatal mothers regarding the prevention of TORCH infections. There is a significant association between their demographic variable like age, occupation and birth order with their pretest knowledge score. [10]

Recommendations

- Conduct similar studies using larger sample sizes.
- Replicate the study in both rural and urban settings.

- Compare different educational methods such as video-assisted teaching, mobile-based education and group discussions.
- Conduct follow-up studies to assess long-term retention of knowledge.
- Evaluate changes in preventive practices in addition to knowledge.
- Develop standardized educational modules on TORCH infection for routine antenatal care.
- Encourage community-based awareness programmes involving families and community health workers to improve maternal health education.

Acknowledgments

The authors extend gratitude to all the participants, and staff at the college for their support during data collection.

CONflict Of Interest

The Authors Declare No Conflict Of Interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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