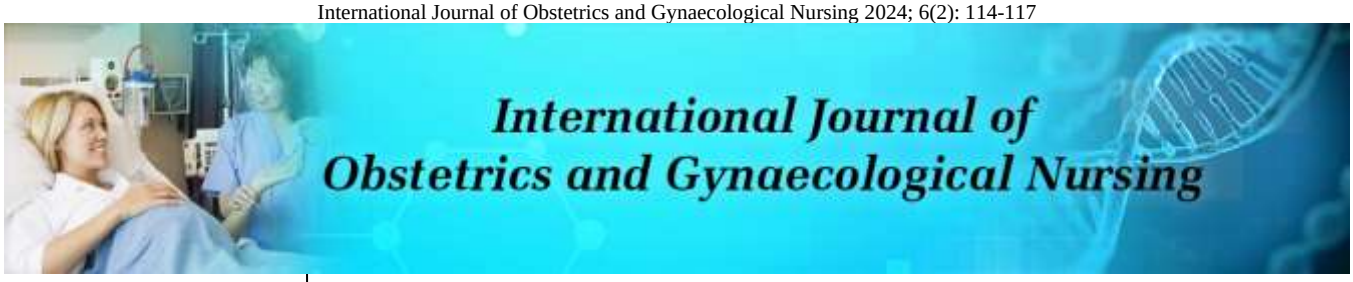

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Anju A Thomas
Associate Professor,
Department of Obstetrical & Gynecological Nursing,
Dhanwantari Nursing College,
Bangalore, Karnataka, India

Corresponding Author:
Anju A Thomas
Associate Professor,
Department of Obstetrical & Gynecological Nursing,
Dhanwantari Nursing College,
Bangalore, Karnataka, India

A study to assess the effectiveness of planned teaching program on knowledge regarding the prevention of TORCH infections among antenatal mothers in selected hospitals Bangalore, India

Anju A Thomas

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Abstract
Introduction: Infections acquired in utero or during the birth process are a significant cause of fetal and neonatal mortality and an important contributor to early and later childhood morbidity. Fetal infections can be caused by virus, bacteria and parasite. Some of these infections are mainly associated with Toxoplasma Gondi, rubella, cytomegalovirus and herpes simplex virus. They have several clinical features in common and hence given the acronym "TORCH" group of infections.
Aim: 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.
Materials and Methods: A quantitative approach was adopted to conduct this study and the design used was pre experimental one group pretest and posttest research design. A non-probability convenient sampling technique was used for generating necessary data from 60 antenatal mothers visiting the antenatal OPD. A self–structured questionnaire was developed which consisted of 30 questions which emphasizes on the preventive measures against TORCH infections.
Results: The findings shows that 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 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. Hence hypothesis H_2 is accepted.
Interpretation and Conclusion: This study shows that 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.

Keywords: TORCH, antenatal mothers, planned teaching program, congenital infection

Introduction

Pregnancy is considered as the most beautiful and elegant phase for a women's life. During this period both mother and baby's health has an equal importance to all who supports and cares them [1]. Many factors influence the outcome of the pregnancies. Generally, primary maternal infection and early gestational age are associated with more severe newborn health problems. Infections representing a potentially serious threat during the pregnancy period are the TORCH group: toxoplasmosis, rubella, cytomegalovirus (CMV), and herpes virus (HSV). With the exception of toxoplasmosis, caused by the protozoan parasite Toxoplasma gondii, each of these diseases is caused by viruses. This term has served to increase an awareness of a class of organisms that have cause havoc in the transplacentally infected fetus in the form of fetal loss, structural anomalies and developmental defects [2].

Toxoplasmosis is caused by the protozoan called toxoplasma gondii. Toxoplasma is very common parasite found in humans. It may be very common, but most people who are immunocompetent are asymptomatic [3]. When a pregnant woman gets infected with toxoplasma, there is a chance that the infection can be passed to the fetus via the chorionic villi in the placenta. When this happens, the mother may experience the classic congenital

toxoplasma triad of Chorioretinitis, Hydrocephalus, Intracranial calcifications. If the mother is infected with toxoplasma the nonspecific symptoms include low grade fever, malaise, and head ache lymphadenopathy [4]. To prevent the transmission of Toxoplasmosis, Avoid handling cat litter, particularly cats that have access to the outdoors where they may eat infected rodents and small birds. Cook meats very well. Wear gloves if you are going to be working in the garden or will be handling soil which may potentially have toxoplasma. Wash garden vegetables very thoroughly, to prevent any contamination [5].

Syphilis is caused by the spirochete bacterium called Treponema pallidum. In adults, it is transmitted via sexual contact. In congenital syphilis, 40% of fetuses get hydrops fetalis and do not make it past birth [6]. For those babies that do get born, most of them get symptoms: failure to thrive, anemia, maculopapular rash, hepatosplenomegaly, periostitis, and rhinitis. Later on, the patients may develop Hutchinson teeth (notched teeth), saddle nose (from bridge of nose breaking), saber shin (anteriorly-curved tibia), and short maxilla [7]. To prevent congenital syphilis, screen the expectant mother for syphilis and treat her with penicillin G to minimize transmission to the fetus. Syphilis infected mother should give adequate support. Prepare mother mind for C-section to reduce the infection rate to new born. The couples are advice to use condoms during sexual practice to prevent the transmission [8].

Rubella is also known as "*German Measles."* Rubella is spread through respiratory droplets, and the mother who gets it will show upper respiratory tract symptoms, rash that starts on the trunk, lymphadenopathy, and arthritis [9]. The baby is often born with intrauterine growth restriction (IUGR), meaning they are restricted from growth in the placenta. It is often symmetric, meaning both the head and the body are restricted from growing, and this causes the baby to be born with a small head (microcephaly), and therefore mental retardation. The baby may also develop a "blueberry muffin rash." Rubella, however, is an easy disease to prevent, and anyone who has not been vaccinated with MMR should consider it before getting pregnant. For those women who do get the vaccine, they should wait at least 28 days before attempting to get pregnant, since MMR is a live vaccine and body needs time to build up those antibodies against it [10].

Cytomegalovirus (CMV) is transmitted via bodily fluids, which includes sexual contact, organ transplants, blood transfusions, breast milk, saliva, urine, and transplacentally from mother to fetus. Usually it can transmit from the mother to fetus when the mother has either a primary infection or reactivation of the CMV during pregnancy [11]. The mother may have heterophile negative mononucleosis, presenting with fever, sore throat, and fatigue. Like other TORCH infections, mothers who do not show signs of the infection can still be at risk of passing the infection to their fetuses [12]. The babies infected with CMV may likely to develop intrauterine growth restriction, jaundice, and seizures, pneumonia, hepatosplenomegaly, or psychomotor retardation. To prevent congenital CMV, the pregnant mother should wash hands thoroughly after touching diapers or saliva, and avoid any contact with bodily fluids, particularly from young children who are at more risk of getting CMV. Women who are confirmed to be infected should get ganciclovir treatment to decrease the risk of spread to the fetus [13].

Herpes simplex virus (HSV) comes in two strains, HSV 1 (oral herpes), and HSV 2 (genital herpes). HSV is transmitted via skin or mucous membrane contacts, such as during birth through an infected genital tract [14]. Mothers that have an HSV outbreak often have vesicular lesions on their genitals. Like many TORCH infections, mother who have genital herpes often may not show signs of an outbreak, but still have the risk of transmitting it to the fetus during vaginal birth. If suspect HSV in the mother, or if the mother has a history of HSV, then we should recommend doing a C-section to prevent the fetus from passing through a potentially infected vaginal canal [15].

Statement of the problem

"A study to assess the effectiveness of planned teaching program on knowledge regarding the prevention of TORCH infections among the antenatal mothers at selected hospitals, Bangalore."

Objectives of the study

1. To assess the existing knowledge level of antenatal mothers regarding the prevention of TORCH infections.
2. To evaluate the effectiveness of planned teaching programme regarding the prevention of TORCH infection among the antenatal mothers.
3. To find the association between the Pre-test knowledge level score with their selected socio demographic variables among the antenatal mothers.

Assumptions

- Knowledge level varies from individual to individual
- Some socio economic variables influence the knowledge level of antenatal mothers regarding the prevention of TORCH infections.

Materials and Methods

Quasi experimental one group pretest posttest design was adopted for this study. The present study was conducted in the selected Hospital, Bangalore. Non probability convenient sampling technique was used for this study. The population of the study was 60 antenatal mothers visiting the OPD of the hospital. Formal written permission was obtained from concerned authorities of the hospitals before data collection. The structured interview schedule was adopted to assess their knowledge. The structured interview schedule contains 9 socio demographic variable and 30 multiple choice questions which covers the general information and preventive management of Toxoplasmosis, Syphilis, rubella, Cytomegalovirus, Herpes Simplex. Each correct answer carries one mark and wrong response carries 0 marks. Score <50 indicates inadequate, 51-75 moderate and >75 adequate. A brief introduction was given about the researcher and the consent was taken from each study sample. Antenatal mothers were made to sit comfortably, pretest data was collected by administration of pre tested structured interview schedule. 30-45 minutes time was taken to collect data from each study participant, after collection of pretest data. Thereafter the planned teaching program was conducted for 45minutes. The post test data was collected after 7 days from the antenatal mothers.

Major Findings

Data was analyzed based on the objectives of the study

Table 1: Classification of the antenatal mothers based on demographic variables

Sl. No	Demographic Variables	No	%
1	**Age**		
	a) 18-22years	22	36.67
	b) 22-26 years	23	38.33
	c) 26-30 years	7	11.67
	d) Above 30 years	8	13.33
2	**Gestational age at present**		
	a) Up to 12 weeks	14	23.34
	b) 12-24 weeks	18	30
	c) 24-36 weeks	21	35
	d) 36-42weeks	7	11.67
3.	**Birth order**		
	a) Primigravida	31	51.66
	b) Second gravida	24	40.00
	c) Multigravida	5	8.34
4.	**Religion**		
	e) Hindu	17	28.33
	f) Muslim	24	40.00
	g) Christian	19	31.67
	a) Others	0	0.00
5.	**Education**		
	a) Illiterate	3	5
	b) High school	8	13.34
	c) PUC	33	55.00
	d) College	16	26.66
6.	**Occupation**		
	a) Private employee	28	46.67
	b) Government employee	15	25
	c) Business	11	18.33
	d) Coolie	6	10
	e) Unemployed	0	0
7.	**Monthly income**		
	a) Less than Rs. 5000	0	0
	b) Rs. 5001-10000	8	13.34
	c) Rs.10001-15000	9	15
	d) Rs. 15001 and above	43	71.66
8.	**Type of family**		
	a) Nuclear family	44	73.34
	b) Joint family	5	8.33
	c) Extended family	11	18.33
9	**Source of information**		
	a) Mass media	2	3.33
	b) Health Personnel	7	11.67
	c) Friends & families	3	5.00
	d) Not aware	48	80.00

Out of 60 antenatal women 38.33% (23) of women belongs to the age group of 22-25years, 35.0% (21) belongs to the gestational week of 24-36 weeks, 51.66% (31) were primi gravida, 40.00 %(24) of them were Muslims, 55.00% (33) of them were PUC, 46.6 %(28) of them were doing private job, 71.66 %(43) of them had Rs.15001 and above, 73.34% (44) belongs to nuclear family, 80% (48) of them were not aware about the prevention of TORCH infection.

Table 2: Distribution on level of overall knowledge scores regarding the prevention of TORCH infections among antenatal mothers in pretest and posttest.

Sl. No	Level of Knowledge	Pre test		Post test	
		Frequency	Percent	Frequency	Percent
1	Inadequate	55	91.6%	0	0
2	Moderate	5	8.3%	27	45
3	Adequate	0	0	33	55

The above table depicts the overall knowledge score of antenatal mothers regarding the prevention of TORCH infection. In the pretest score 91.6% of had inadequate knowledge, where as in posttest, 55% of them had adequate knowledge.

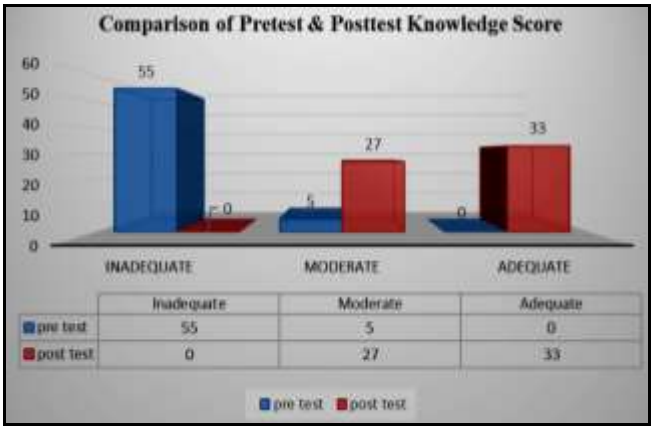

Fig 1: Shows the comparison of pretest knowledge score and posttest knowledge score

Table 3: Comparison of pretest and posttest mean and standard deviation; paired t test and p value of knowledge regarding the prevention of TORCH infection.

Aspects	Max Score	Knowledge Scores		Paired 't' Test
		Mean	SD	
Pre-test	30	8.83	1.26	
Post test	30	27.10	2.74	44.98

Revealed that posttest mean score (27.10) was significantly high than the pretest mean score (8.83) on knowledge regarding prevention of TORCH infections among antenatal mothers. Paired "t" test values was 44.98 which is statistically significant at the level. It indicates that the planned teaching program was significantly effective in improving the knowledge regarding prevention of TORCH infections among antenatal mothers.

Association between demographic variables with pretest knowledge scores on prevention of TORCH infections among antenatal mothers with their selected sociodemographic variable

There is a significant association between the demographic variable like age (10.48), birth order (15.79) and occupation (27.63) with their pretest knowledge score level regarding the prevention of TORCH infection.

Discussion

The findings revealed that majority of the antenatal mothers (91.6%) had inadequate knowledge regarding the prevention of TORCH infections. After the implementation of planned teaching program nearly half of the mothers (55%) had gained knowledge about the TORCH infections and also the posttest mean scores (27.10) are higher than the pretest mean score (8.83).

Conclusion

This study shows that the implementation of planned teaching program improved the knowledge of antenatal mothers regarding the prevention of TORCH infections.

Nursing Implications

Nursing Practice

The health teaching is one of the important aspects in clinical and community settings. Health education improves the antenatal women's knowledge on prevention of TORCH infection. The result of the study is useful in planning the health care actions in different settings.

Nursing Research

Research must be carried out on newer practices and innovative teaching methods are in-corporate. The study will serve as a valuable reference material for future investigations. Further research studies can be conducted on the basis of this study.

Nursing Administration

Nursing administers should implement in patient programme and seminars to make patients awareness about prevention of TORCH infection in antenatal mothers. In-service education for the whole staff regarding prevention of TORCH infection in antenatal mothers and in order to update and impart knowledge. It also helps the nursing administrators to plan for man power, money, materials, methods and time to conduct successful health education regarding prevention of TORCH infection in antenatal mothers.

Conflict of Interest

Not available

Financial Support

Not available

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