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### RESEARCH ARTICLE

#### “A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING HEALTH HAZARDS OF ELECTRONIC DEVICES AMONG ANTENATAL MOTHERS AT SELECTED MATERNITY HOSPITALS, BANGALORE”

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#### Abstract

**Background of the Study:** Electronic devices are components for controlling the flow of electrical currents for the purpose of information processing and system control. Prominent examples include transistors and diodes. Electronic devices are usually small and can be grouped together into packages called integrated circuits. Electronic devices are now an integral part of modern life. In many countries over half the population use electronic devices and the market is growing very rapidly. The electromagnetic field radiations impart an adverse effect on physical, mental and the emotional state of a pregnant mother and deeply affect the brain cells of mother and her unborn child. It affects level of melatonin, a sleep- controlling hormone which causes sleep disturbances in mothers, that pass to unborn babies through the placenta resulting in growth retardation.

##### Objectives:

1. To assess the level of knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers in selected maternity Hospitals, Bangalore.
2. To evaluate the effectiveness of structured teaching program on knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers attending in selected maternity Hospitals, Bangalore.
3. To determine the association between knowledge score with selected demographic variables among antenatal mothers attending in selected maternity Hospitals, Bangalore.

**Methods:** The research approach adopted was an **evaluative research approach** and research design adopted for this study was **Pre experimental one group pretest and post-test** research design. Simple random sampling technique was used to collect 60 antenatal mother sample. Data was collected over a period of one month. Structured knowledge questionnaire used as a tool to assess knowledge regarding the health hazards of electronic devices. Data obtained was analysed in terms of objectives which was calculated and tabulated.

**Results:**In pretest, out of 60 antenatal mothers, 33.3% had inadequate knowledge and 66.7% had moderately adequate knowledge and none of the antenatal mothers had adequate knowledge. In post-test, out of 60 antenatal mothers, 73.3% had adequate knowledge, 26.7% had moderately adequate knowledge and none of the antenatal mother had inadequate knowledge. Over all knowledge the paired mean difference was 11.08 and SD of difference was 0.263 and enhancement mean percentage was 37 It was found significant ( $t=24.464$ ,  $df=59$ ) (i.e,  $p<0.05$ ). The paired t-test was also worked out and it was found to be invariably significant (i.e  $p<0.05$ ). The present study found the significant association between knowledge regarding health hazards of electronic devices at selected demographic variables of antenatal mothers.

**Interpretation and Conclusion:** The study concluded that the post-test knowledge of antenatal mothers was improved after undergone Structured teaching programme regarding health hazards of electronic devices. The overall findings of the study clearly showed that the structured teaching programme was effective in improving the knowledge level of antenatal mothers regarding health hazards of electronic devices.

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**Introduction:-**

**“A mother’s joy begins when new life is stirring inside... When a tiny heartbeat is heard for the very first time, and a playful kick reminds her that she is never alone.”**

Pregnancy is a beautiful experience which can be made more enjoyable with little care. Pregnancy is the state of carrying fetus inside the uterus by a woman from conception to birth. It is normal physical phenomenon which needs love and care. Antenatal period begins with conception and continues to birth. pregnancy, also known as gestation, is the time during which one or more offspring develops inside a woman. A multiple pregnancy involves more than one offspring, such as with twins. Pregnancy can occur by sexual intercourse or assisted reproductive technology. Pregnant women who are exposed to these radiations frequently, can result in the mental retardation of the child thereby reducing his future development and also cause several births defects Studies have found a possible connection between babies exposed to mobile phones in the womb behavioural problems, such as hyperactivity, during childhood.<sup>1</sup>

Electronic devices are components for controlling the flow of electrical currents for the purpose of information processing and system control. Prominent examples include transistors and diodes. Electronic devices are usually small and can be grouped together into packages called integrated circuits. Electronic devices are now an integral part of modern life. In many countries over half the population use electronic devices and the market is growing very rapidly. One of the first electronic device was invented around 1835 by an American scientist called Joseph Henry, which worked magnetism and current It was part of telegraph and was used in telephone. The Electromagnetic radiations from various devices such as smart phone, laptop, e-cigarette, home computer, hairdryer, microwave oven etc,<sup>2</sup> can interact with body in a different way and causes harmful effect to the pregnant women, fetus and children.<sup>3</sup>

There are many different reasons why a child may develop behavioural problems.

For example, it’s possible that if a mom uses her mobile often, she may be giving her baby less attention. If a baby or young child is deprived of the attention may develop behavioural problems. The electromagnetic field radiations impart an adverse effect on physical, mental and the emotional state of a pregnant mother and deeply affect the brain cells of mother and her unborn child. It affects level of melatonin, a sleep- controlling hormone which causes sleep disturbances in mothers, that pass to unborn babies through the placenta resulting in growth retardation.<sup>4</sup>

Early development of a fetus is particularly a dangerous time for electromagnetic field radiation exposure. Between the gestation of 2 to 15 weeks of development, radiation exposure can cause birth defects such as mental retardation,

decreased growth and severe brain damage. The effects of radiation are similar, though more often after extreme exposure, from the 16th to the 25th week of pregnancy. After 26 weeks of development, the fetus is less likely to suffer effects, but there is still a risk if exposed frequently to electromagnetic field radiation. Prenatally maximum electromagnetic field exposure is associated with high risk of miscarriage in early pregnancy. Radiation exposure is considered one of the factors that are harmful to expectant mothers. It is said to be dangerous for pregnant women and their babies to be exposed to high doses of radiation in small doses over extended periods of time. Radiation might be particularly damaging to the fetus during the first trimester of pregnancy because many processes that affect the development of the baby take place during that time. Processes such as organogenesis, i.e. the formation of internal organs. Damage to the baby's central nervous system occurs when pregnant women are exposed to high doses of radiation. Both the woman and her partner should avoid increased exposure to the harmful effects of radiation. Despite the fact that the electromagnetic waves are not visible to the naked eye, they are constantly present in our environment and might have an impact on the human body. Pregnant women who frequently overuse a variety of electrical and electronic devices may inadvertently contribute to stunting fetal brain development. This is because electromagnetic radiation emitted by mobile phones, computers and Wi-Fi routers interferes with proper body functions at a cellular level. Thinner skull bones and faster cell division affect a child's immunity to radiation.<sup>5</sup>

Things can be done to reduce the exposure of electromagnetic field such as keep your cell phone and computer at a distance when possible. while talking on your cell phone, try to keep the cell phone away from your body as much as possible. Avoid Bluetooth, headsets and use a speaker phone instead. Unplug the appliances when not in use. Do not charge the devices while in use. Eat a healthy diet food is medicine so it should be of no surprise protecting your body from the negative of electronic devices.<sup>6</sup>

### Objectives:-

1. To assess the level of knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers in selected maternity Hospitals, Bangalore.
2. To evaluate the effectiveness of structured teaching program on knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers attending in selected maternity Hospitals, Bangalore.
3. To determine the association between knowledge score with selected demographic variables among antenatal mothers attending in selected maternity Hospitals, Bangalore.

### Methods:-

#### Research approach:-

#### An evaluative research approach

#### Research design:-

Pre experimental one group pretest and post-test research design. Data was collected over a period of one month. Structured knowledge questionnaire used as a tool to assess knowledge regarding the health hazards of electronic devices. Data obtained was analysed in terms of objectives which was calculated and tabulated.

The pre experimental with one group pretest & post test design chosen for the study is as prescribed in the table: -

Study group	Pretest	Intervention	Post test
Antenatal mothers who visited in OPD	Administration of Knowledge questionnaire regarding health hazards of electronic devices among antenatal mothers.	Administration of structured teaching program regarding health hazards of electronic devices among antenatal mothers.	Post test knowledge regarding health hazards of electronic devices among antenatal mothers.
	<b>O1</b>	<b>X</b>	<b>O2</b>

#### Keys:

**O1:** Pre-test knowledge score.

**X:** Structured Teaching Program regarding health hazards of electronic devices.

**O2:** Post-test Knowledge score.

**Variables Under the Study:**

**Independent variable:**

The independent variable is the condition or characteristic manipulated by the researcher. In the present study the independent variable is the “Structured teaching program”.

**Dependent variable:**

The dependent variable is the condition or characteristics that appears or disappears as a result of independent variables. In the present study the dependent variable is “knowledge regarding health hazards of electronic devices among antenatal mothers”.

**Extraneous variable:**

Preexisting characteristic of the entity under investigation, which the researchers simply observes and measure. In this study the extraneous variables are age, religion, educational qualification, types of family, place of residence, occupation of mother, the duration of electronic devices used per day and previous source of information.

**Setting of the Study:**

Setting is the physical location and the condition in which data collection takes place in a study. It may be natural setting depending upon the study topic and researcher’s choice. The setting of this study at selected Lakshmi maternity hospitals, Bangalore. Formal permission was obtained from the Administrative authorities for conduction of the study. The criterion for selecting study setting is based on: -

The availability of subject.  
Feasibility of conducting the study.

**Population:**

Target population is antenatal mothers. Accessible population is antenatal mothers in Lakshmi maternity hospital

**Sample and Sample Size:**

Sample refers to subset of a population, selected to participate in a research study.  
The sample size for the present study is 60 antenatal mothers.

**Sampling Technique:**

The samples were selected by using Probability, Simple random sampling technique through simple random sampling approach. The sample for the present study was 60 antenatal mothers at selected Lakshmi maternity hospitals, Bangalore.

**Criteria for Selecting the Sample**

**(a) Inclusion criteria**

1. Antenatal mothers who are presented at the time of data collection.
2. Antenatal mothers, who knows English and Kannada.

**(b) Exclusion criteria**

1. Antenatal mothers who are not willing to participate in the study.
2. Antenatal mothers who did not sign consent.

**Hypothesis:**

H1: There will be significant difference between pretest and post-test knowledge scores on health hazards of electronic devices among antenatal mothers with selected demographic variables.

H2: There will be significant association between the knowledge score on health hazards of electronic devices among antenatal mothers in selected maternity hospital with selected demographic variables.

**Result:-**

**Section 1-** distribution of samples based on frequency and percentage of demographic characteristic.

N=60

SI No	DEMOGRAPHIC		Frequency	Percentage (%)
1	Age (years)	18-25	20	33.3
		26-33	36	60.0
		34 and above	4	6.7
2	Religion	Hindu	43	71.7
		Muslim	11	18.3
		Christian	6	10.0
3	Education qualification	No formal education		
		Primary	11	18.3
		SSLC	41	68.3
		PUC	8	13.3
		Degree & Above		
4	Type of family	Nuclear	39	65.0
		Joint	21	35.0
5	Income	Below 5000		
		5001-10000	43	71.7
		10001-15000	17	28.3
		Above 15000		
6	Place of residence	Urban	32	53.3
		Rural	28	46.7
7	Occupation of mother	House wife	23	38.3
		Employed	37	61.7
8	Duration of use of electronic device per day	Less than hour	19	31.7
		2-3 hrs	33	55.0
		More than 4 hrs	8	13.3
9	Previous knowledge obtained about television watching	Yes	60	100.0
		No		
10	If yes, source of previous knowledge	Mass media	21	35.0
		Health care worker	25	41.7
		Books or journals	14	23.3
		Health care worker	25	41.7

**Section 2:-** Assessment of Pre and Post Test Knowledge.N=60

Knowledge Level	Classification of Respondents			
	Pre test		Post test	
	Number	Percentage (%)	Number	Percentage
Inadequate ( $\leq 10$ )	20	33.3	00	00
Moderate (11-20)	40	66.7	16	26.7
Adequate (21-30)	00	00	44	73.3
<b>Total</b>	<b>60</b>	<b>100</b>	<b>60</b>	<b>100</b>

In the pre-test majority 04 (66.7%) had inadequate knowledge, But, in post-test, all 6 (100%) had adequate knowledge, it evidenced that there is an increase in the knowledge

**Section-3:-** Effectiveness of Structured Teaching Program on Regarding Health Hazards of Electronic Devices Among Antenatal Mothers at Selected Maternity Hospitals, Bangalore.  
Outcomes of Paired T-Test Analysis on Comparison of Pre and Post Test Practice

Asp ects	Max. Score	Respondents Knowledge Scores			SE of Mean Diff	Paired 't' Test	Df	P Value	Inference
		Mean	SE of Mean	Mean %					
Pre test	30	12.7	0.49	<b>42.3</b>	0.453	24.464	59	<0.05	HS
Post test	30	23.78	0.524	<b>79.3</b>					

### Hypothesis Testing 1

**Ho:** There is no statistically significant difference between the pre-test and post-test knowledge score of the samples after health education on knowledge regarding health hazards of electronic devices among antenatal mothers.

**H1:** There is a statistically significant difference between the pre-test and post- test knowledge score of the samples after health education on knowledge regarding health hazards of electronic devices among antenatal mothers.

The above table represents the mean pre-test and post-test knowledge regarding health hazards of electronic devices among antenatal mothers. paired t- test was carried out and it was found invariably significant at  $p < 0.05$  level, hence null hypothesis (Ho) is rejected and the research hypothesis (H1) was accepted. It provides the evidence that the health education was significantly effective in providing knowledge regarding health hazards of electronic devices among antenatal mothers.

**Section 4:-** Association between post-test knowledge score with their selected demographic variables  $N=60$

SI No	DEMOGRAPHIC	Below median	Above median	total	Chi square	d f	P value	
1	Age(years)	18-25	13	7	20	1.212	2	0.545 NS
		26-33	18	18	36			
		34 and above	2	2	4			
2	Religion	Hindu	24	19	43	0.073	2	0.964 NS
		Muslim	6	5	11			
		Christian	3	3	6			
3	Education qualification	Primary	6	5	11	0.213	2	0.899 *
		SSLC	22	19	41			
		PUC	5	3	8			
4	Type of family	Nuclear	23	16	39	0.711	1	0.399 NS
		Joint	10	11	21			
5	Income	Below 5000				0.140	1	0.708 NS
		5001-10000	23	20	43			
		10001-15000	10	7	17			
6	Place of residence	Urban	16	16	32	0.693	1	0.405

		Rural	17	11	28			NS
7	Occupation of mother	House wife	14	9	23	0.519	1	0.471 NS
		Employed	19	18	37			
8	Duration of use of electronic device per day	Less than hour	14	5	19	3.976	2	0.137 NS
		2-3 hrs	15	18	33			
		More than 4 hrs	4	4	8			
9	Previous knowledge obtained about television watching	Yes	33	27	60			
		No						
10	If yes, source of previous knowledge	Mass media	12	9	21	1.126	2	0.570 NS
		Health care worker	15	10	25			
		Books or journals	6	8	14			

Note: \*-Significant at 95% ( $p < 0.05$ ), NS-Not significant at 95% ( $p < 0.05$ )

### Hypothesis Testing 2

**Ho:** There is no significant association between knowledge and selected demographic variables.

**H2:** There is a significant association between post-test knowledge score and selected demographic variables.

The above table represents the association between post-test knowledge score with their selected demographic variables. The Chi-square test was carried out and it was found statistically significant at  $p < 0.05$  level (education qualification Chi-square = 0.213 at 2 df), hence research hypothesis (H2) is accepted and the null hypothesis (HO) was rejected. It provides the evidence that there is significant association between knowledge and demographic variables.

### Discussion:-

This chapter includes the discussion of the findings of the study interpreted from statistical analysis. The present study was conducted to assess the effectiveness of structured teaching program regarding ill effect of electronic devices. In order to achieve the objectives of the study, pre-experimental one group pre-test post-test design with evaluative approach was used. Simple random sampling technique was adopted to select the samples. The study was conducted in Lakshmi maternity hospitals, Bangalore and data was collected from 60 antenatal mothers before and after the structured questionnaire to assess their knowledge. The findings are discussed in relation to the objectives, need for the study, related literature and conceptual framework. It is presented in the line with objectives of the study.

### Hypothesis:

H1: There will be significant difference between pretest and post-test knowledge scores on health hazards of electronic devices among antenatal mothers with selected demographic variables.

H2: There will be significant association between the knowledge score on health hazards of electronic devices among antenatal mothers in selected maternity hospital with selected demographic variables.

### Characteristics of the demographic Variables:

The characteristics of the demographic variables described in terms of their frequency and percentage distributions which pasteurizes that 33.3% of them were in 18-25 years of age group, 60% of them were in 26-33 years of age group and 6.7% of them were in 34 and above age group 71.7% were Hindus, 18.3% were Muslims and 10% were

Christians. 18.3 % had primary education, 68.3% had secondary education, 13.3% had higher secondary education. 35% were belonging to joint family and 65% belonging to nuclear family. 71.7 % had income between Rs.5001-10000, and 28.3% had income between Rs. 10001-15000 per month. 46.7 % living in rural area, and 53.3% living in urban area. 61.7 % are employed, and 38.3% are house wife's. 13.3% are using devices more than 4 hours, 55% are using devices between 2-3 hours and 31.7% are using devices less than 1 hour. 35% had information from mass media, 41.7% from health care workers and 23.3% from books or journals.

### **Objectives 1:**

To assess the level of knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers. It shows that, the pre-test knowledge level result shows 33.3 of the respondents possesses inadequate knowledge, 66.7% of them were found to be with moderately adequate knowledge and no respondent possessed adequate knowledge. The mean percentage and standard deviation of knowledge variables of antenatal mothers in the pre-test showed that the overall knowledge of antenatal mothers was 12.7% with standard deviation 3.792. The highest mean score of subjects is 93% with standard deviation 0.252 introduction and definition regarding of electronic devices. The lowest mean score of the subject is 30.4% with standard deviation 1.295 in knowledge about measures to reduce the health hazards of electronic devices. This decrease in overall knowledge indicated that antenatal mothers need more information regarding health hazards of electronic devices.

In the post test, majority 73.3% of the subjects had adequate knowledge, 26.7% of subjects had Moderately adequate knowledge and none of them had inadequate knowledge regarding health hazards of electronic devices. A study to assess the effectiveness of video assisted teaching on knowledge regarding the ill effects of mobile phone usage among the antenatal mothers and to educate the antenatal mothers about the ill effects of mobile phone usage on health

### **Objective 2:**

To evaluate the effectiveness of structured teaching program on knowledge regarding health hazards of electronic devices during pregnancy among antenatal mothers by comparing pre-test and post-test. The pretest range was 6-20, mean 12.7, standard deviation was 3.792, mean percentage was 43.3% and the post test range was 15-29, Mean was 23.78, standard deviation was 4.055, and mean percentage was 79.3%. A study was conducted to assess the effectiveness of structured teaching program regarding the health hazards of electronic devices among prenatally exposed to cell phone radiation mothers, where questionnaire was administered related to cell phone usage during pregnancy, years of regular use, amount of use and behavioural problems of the children. Mother's completed question with scaled responses very true, partly true, or not true regarding their child's behavior. Results showed that 17.9% were exposed to cell phone during prenatal and postnatal period and was found to be statistically significant at the  $p < 0.05$ .

### **Objective 3:**

To determine the association between post-test knowledge scores with the selected demographic variables among antenatal mothers attending in selected maternity Hospitals, Bangalore. The Chi square analysis was carried out to determine the association of knowledge with their selected demographic variables of antenatal mothers and it is found to be associated with variables such as educational qualification (Chi-square= 0.213, df=2) was significantly associated with knowledge. The other variables were not statistically significant at 95% level ( $p > 0.05$ ). Therefore, the Hypothesis H2 as stated, there is a significant association with post-test knowledge score and socio-demographic variables (i.e. educational qualification) is accepted. Effect of a planned teaching program on postnatal care to antenatal mothers was assessed in a study done at Malik Dinar Hospital, Kasargod. The one group pre- test post-test design was used for the study. It was found that teaching was very effective in improving the knowledge of antenatal mothers as evidenced by the value obtained at the comparison of pre-test and post-test knowledge scores. ( $t=30.56$   $p < 0.01$ ). There was significant association of pre-test knowledge scores of antenatal mothers with age and parity at ( $p < 0.05$ ) level

### **Conclusion:-**

The focus of this study to assess the effectiveness of structured teaching program regarding health hazards of electronic devices at selected maternity hospitals, Bangalore. A preexperimental design and evaluative approach was used in the study. The data collected from 60 samples through simple random sampling technique. The conclusion drawn from the study is as follows: The majority of mothers willingly participated in the study. The antenatal mothers had some knowledge about health hazards of electronic devices. The study based on the general system

model of Von Ludwing Bertalanffy theory. It provides a comprehensive systemic frame work for effectiveness of structured teaching program to evaluate the knowledge regarding the health hazards of electronic devices. Further, the conclusions were drawn on the basis of the finding the study includes, 1. Knowledge of antenatal mothers regarding the health hazards of electronic devices was found to be 33.3% had inadequate knowledge before administration of structure teaching program. 2. The knowledge score of antenatal mothers regarding health hazards of electronic devices was found to be 66.7% had moderately adequate knowledge and none of them had adequate knowledge before structured teaching program. 3. Overall knowledge scores of antenatal mothers were found to be 34.16% before administration of STP. 4. The structured teaching program was effective in increasing the knowledge of antenatal mothers. 5. There was a significant difference between the pre-test and post-test knowledge score of the antenatal mothers after giving Structured Teaching Program on health hazards of electronic devices. 6. There was a statistically association between knowledge regarding health hazards of electronic devices and selected demographic variables of antenatal mothers.

**Implication of the Study:**

The findings of the study can be used in the following areas of Nursing profession.

**Nursing practice:**

1. Present study would help the nurse to understand the knowledge of antenatal mothers regarding health hazards of electronic devices.
2. These findings suggest that there is an increase need of awareness program regarding health hazards of electronic devices.

**Nursing education:**

1. As a nurse educator, there are copious opportunities for nursing professionals to educate the other members regarding health hazards of electronic devices. There should be some specialized training or course to improve the knowledge of antenatal mothers regarding health hazards of electronic devices and step to reduce the ill effects.
2. As a nurse educator, there are abundant opportunities for nursing professionals as well as their family regarding health hazards of electronic devices and step to reduce the ill effects.
3. The study emphasizes the significance of education for nurses with advanced knowledge regarding health hazards of electronic devices and Step to reduce the ill effects.
4. The present study emphasizes significance on enhancement of knowledge regarding health hazards of electronic devices among antenatal mothers through structured teaching program in order to increase their knowledge, skills.

**Nursing administration:**

1. The administration should communicate on the proper selection, placement and placement and effective utilization of the nurses in hospital and community, giving opportunity for creativity, interest, and ability in educating the antenatal mothers regarding health hazards of electronic devices.
2. The nursing administrator can mobilize the available resource personnel toward the health education of antenatal mothers regarding health hazards of electronic devices.

**Nursing research:**

1. This research helps the nurse researcher to develop appropriate health education tools for educating antenatal mothers regarding the health hazards of electronic according to their demographic, socio-economic, culture and political characteristics.
2. Nurse should come forward to take up unsolved question related to health hazards of electronic devices to carry out studies and publish them for the benefits of public and nursing fraternity.

**Suggestions:-**

Public awareness regarding health hazards of electronic devices shall be created by mass media such as newspapers, magazines, television and internet and also by conducting seminars and workshops.

**Recommendations:-**

On the basis of the findings of the study, the following recommendations have been made.

1. A similar study may be conducted on a large sample for wider generalization.
2. A study can be conducted by including additional demographic variables.
3. An experimental study can be under taken with control group for effective comparison of result.
4. A similar study can be conducted on the general population.
5. A comparative study can be conducted with post-natal lactating mothers.
6. A similar study can be conducted to assess the practice.

**Limitations:**

The study is limited to 60 antenatal mothers. The small number of samples limits generalization of the study. Data collection period is 4 weeks and knowledge are assessing through STP.

**Summary**

The present study was conducted on to “Evaluate the effectiveness of structured teaching program regarding health hazards of electronic devices among antenatal mothers in selected maternity hospitals at Bangalore.”

The present study was a pre-experimental one group pre-test and post-test research design. The sample selected for the study were 60 and self-administered questionnaire was used to collect data and to evaluate the knowledge of antenatal mothers before and after administration of the structured teaching program. The questionnaire consists of Section A and Section B. the study was conducted in Lakshmi maternity hospital at Bangalore.

**Findings related to demographic variables**

- Maximum number of antenatal mothers that is 60% of them were in 23-33 years age group.
- In regards to religion 71.7% were Hindus.
- In education level 68.3% had secondary education.
- With respect to income per month 71.7% had between Rs.5001-10000 per month.
- According to the type of family majority 65% belonging to nuclear family.
- According to the area of living majority 53.3% living in urban area.
- In regards to the occupation 61.7% are employed.
- According to the usage of electronic devices per day majority 55% between 2-3 hours per day.
- Regarding the sources of information, a majority 41.7% got information from health care workers.

Findings on assessment of pre-test and post-test knowledge regarding health hazards of electronic devices In the pre-test, 33.3% sample had inadequate knowledge, 66.7% of them was found to be with moderately adequate and none of them with adequate knowledge. But, in post-test, a majority 73.3% had adequate knowledge, 26.7% had moderately adequate knowledge and none of them had inadequate knowledge. The pretest range was 6-20, mean 12.7, standard deviation was 3.792, mean percentage was 43.3% and the post test range was 15-29, Mean was 23.78, standard deviation was 4.055, and mean percentage was 79.3%. This indicated an evidenced that there is an increase in the knowledge regarding health hazards of electronic devices among antenatal mothers after structured teaching program.

**Findings on effectiveness of structured teaching program on knowledge regarding health hazards of electronic devices**

To assess the mean pre-test and post-test knowledge regarding health hazards of electronic devices among antenatal mothers. The paired t-test was carried out and it was found invariably significant at  $p < 0.05$  level, hence null hypothesis ( $H_0$ ) is rejected and the research hypothesis ( $H_1$ ) was accepted. It provides the evidence that the structured teaching program was significantly effective in providing knowledge regarding health hazards of electronic devices among antenatal mothers.

**Findings on association between posttest knowledge and demographic variables of antenatal mothers.**

To assess the association between knowledge regarding health hazards of electronic devices with their selected demographic variables The Chi-square test was carried out and it was found statistically significant at  $p < 0.05$  level, hence research hypothesis ( $H_1$ ) is accepted and the null hypothesis ( $H_0$ ) was rejected. It provides the evidence that there is significant association between knowledge and demographic variables.

**References:-**

1. Adelle politer, the text book of Maternal and child health nursing care of the childbearing and family, 5th edition, Philadelphia by Wolters Kluwer LWW, 2007.
2. Electronic devices. Available from: <https://timesofindia.indiatimes.com/...electronic-devices/...>
3. First electronic device invented. Available from: [www.quora.com/what-is-the-first-electronic-device-in world](http://www.quora.com/what-is-the-first-electronic-device-in-world).
4. Health hazards of electronic devices on Pregnancy. Available from: URL: [http://EzineArticles.com/?expert=Charles\\_Bently](http://EzineArticles.com/?expert=Charles_Bently) Telecom Regulatory Authority of India.
5. Electromagnetic field radiation exposure Available from: [http://www.babycentre.co.uk/.../isit-safe-to-use-my-mobile-phone-during- pregnancy](http://www.babycentre.co.uk/.../isit-safe-to-use-my-mobile-phone-during-pregnancy).
6. To reduce the electromagnetic field exposure Available from: [https://articles.mercola.com/. should- pregnant-women-avoid-using-cell-phones.aspx](https://articles.mercola.com/.-should-pregnant-women-avoid-using-cell-phones.aspx).