

Assess The Knowledge Regarding Mobile Hazards on Pregnant Women in Selected Hospital

Rajesh .P Joseph¹, Dr. Ravindra .H .N²

¹Associate Professor, Department of Paediatric Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth deemed to be University, Vadodara, Gujarat

²Professor & HOD, Department of Medical Surgical Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth deemed to be University, Vadodara, Gujarat

ABSTRACT

BACKGROUND OF THE STUDY: Health is a common subject in most culture. In fact all the communities have their perception of health as part of their culture. As nursing personnel we believe that accepting women during the pregnancy period is an important factor for the assessment. As a first step towards women on different aspects of mobile hazards and problems, one should have an insight of what problems precisely happen and how one can prevent it. After reviewing many articles the researchers felt the need to assess the knowledge regarding mobile hazards among the pregnant women.

AIM OF THE STUDY: The present study was carried out with the objectives to assess the knowledge regarding mobile hazards among pregnant women and to find out the association between pre-test score and selected socio demographic variables on mobile hazards during pregnancy.

MATERIAL AND METHODS: A Descriptive study was conducted among 100 pregnant women to assess the knowledge regarding mobile hazards during pregnancy. Non probability convenience sampling technique was used to include the samples in the study and structured knowledge questionnaire was used to assess the knowledge level of the participants. Total of 18 questions asked with their demographic information. Scoring interpretation was done by categorizing the knowledge into three, namely inadequate, moderately adequate and adequate knowledge. Descriptive and inferential statistics were used to analyse the data.

RESULTS: The study findings revealed that, Out of 100 respondents 43% were having very inadequate knowledge, 32% were having Moderate knowledge and 25% were having adequate knowledge. Association between knowledge and demographic characteristics were found significant at 0.05 levels. Thus it was interpreted that there is a significant association between pre test knowledge regarding mobile hazards on pregnant women.

CONCLUSION: By considering the results of the study it was understood that some serious steps has to be taken in health care institutions to create awareness among pregnant women who are visiting the OPD facility. Moreover, local and state health authorities must conduct community awareness programmes on frequent basis.

Keywords: Knowledge, Pregnant women, Mobile hazards, Electromagnetic radiation

1. INTRODUCTION

The mobile phone is an innovation, which has extended its wings to reach many parts of the world and enabling uninterrupted connections across areas where it was not possible before. In the year 2000, there were an estimated 500 million mobile phone users worldwide. Today, there are about 3.3 billion users. It is a planned need which is required to increase the awareness among pregnant women regarding the harmful effects of excessive usage of phone on their sleep wake patterns, with serious health risks of the fetus, as well as attention and cognitive problems of the mother. Hence it requires the assessment of knowledge and attitude regarding the hazards of mobile phones as they use this very frequently.¹

If mobile phones are used during pregnancy there is the possibility of causing problems with their maternal and fetal health. The risk is much higher among pregnant women due to radiation and other related technologies of mobile phones. There are also the greater chances of interference between mobile phones signals and fetus in uterus. Some countries have limited the mobile phone usage during pregnancy and strictly monitor the process.²

According to National Cancer Institute (USA), there are two types of electromagnetic radiations – Ionizing and Non-ionizing. The first type is found in X-Rays and it has been proved that they cause severe diseases in people including pregnant women who are exposed to such emissions. The National Cancer Institute says there is no evidence that cell phones can actually increase the risk of cancer but still, it can increase the temperature of body cells in contact with cellphones.³

Radiation exposure is measured as one of the factors that are harmful to expectant mothers. It is said to be unsafe for pregnant women and their babies to be exposed to heavy doses of radiation in small doses over unlimited 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. Process such as organogenesis, i.e. the development of internal organs. Damage to the baby's central nervous system occurs when pregnant women are exposed to high doses of radiation.⁴

The radiation leads to an adverse effect on physical, mental and emotional state of a pregnant mother. Early development of a fetus is particularly a critical time for cellular radiation exposure. Even though the electromagnetic waves are not visible to the naked eye, they are always 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 unconsciously contribute to stunting fetal brain development.⁵

It was found that excessive usage of mobile phone can harm the fetal and maternal well being. Thinner skull bones and faster cell division affect a child's immunity to radiation. After 26th week of gestation the fetus is less likely to suffer effects but there is still risk if exposed frequently. Over exposure to waves can also lead to miscarriage in early pregnancy.⁶

MATERIAL & METHODS

The study was conducted by using descriptive research design. The populations included in the study were pregnant women attending the OPD in selected hospital. Out of whom 100 pregnant women were

selected by using Non-probability convenience sampling technique. The study included the women who are pregnant, pregnant women who use mobile phone, women who can communicate in Gujarati and English and women who are available during period of data collection. The data collection tool included two sections, the first one consists of socio demographic characteristics and the second one contains structured knowledge questionnaire to assess the knowledge regarding mobile hazards. The total score was calculated by summing up the answers given to the questions and categorised as inadequate, moderate and adequate knowledge. The scoring procedure is divided into 3 categories score 0 to 6 for I inadequate knowledge, score 7 to 12 for M moderate knowledge and score 13 to 18 for A adequate knowledge. The knowledge was assessed using questionnaire through face to face interaction among the pregnant women, who gave their consent to participate in the study after explanation of its purpose and instructions. Data collection process was extended up to 1 month and completed when the desirable samples (100) were obtained. Data were analysed by using descriptive and inferential statistics.

2. FINDINGS

Out of 100 respondents 43% were having very inadequate knowledge, 32% were having Moderate knowledge and 25% were having Adequate knowledge.

FREQUENCY AND PERCENTAGES DISTRIBUTION OF SAMPLES, ACCORDING TO THEIR SOCIO DEMOGRAPHIC CHARACTERISTIC:

Majority sample of (55%) were found in the age group of 22-25 years and minimum of (5%) sample were of more than 30 age, 50% participants were employed and 50% were unemployed, 42% women had done primary education. 44% women had done secondary education, 43% women are in 1st trimester, 46% women are in 2nd trimester and 11% women are in 3rd trimester, 58% of women live in joint family, 66% of women have family income of less than 10,000, 32% of women uses phone for 30 mins , 25% women uses right ear, 48% women uses left year, 24% women uses both ear and 27% women keep their phone in purse .

Sr.No	Characteristics	Frequency	Percentage
1	Age		
	18-21	24	24%
	22-25	55	55%
	25-29	16	16%
	More than 30	5	5%
2	Occupation		
	Employed	50	50%
	Unemployed	50	50%
3	Education		
	Primary	42	42%
	Secondary	44	44%
	Higher secondary	13	13%
	Graduate	1	1%
4	Trimester		
	1 ST	43	43%
	2 ND	46	46%
	3 RD	11	11%
5	Type of family		

	Joint	58	58%
	Nuclear	42	42%
6	Family income		
	Less than 10000	66	66%
	More than 10000	34	34%
7	Do you use cell phone?		
	Yes	100	100%
	No	0	0%
8	For how many hours do you use your mobile phone?		
	30 minutes	32	32%
	45 minutes	30	30%
	1 hour	30	30%
	More than 1 hour	8	8%
9	Which ear do you use when you are on phone?		
	Right	25	25%
	Left	48	48%
	Both	24	24%
	Not sure	3	3%
10	Where do you carry your cell phone?		
	Purse	27	27%
	Pocket	32	32%
	Around neck	20	20%
	On bag	14	14%
	Any other	7	7%

DISTRIBUTION OF KNOWLEDGE SCORES OF PREGNANT WOMEN: In study it highlights that out of 100 respondents 43% were having very inadequate knowledge, 32% were having Moderate knowledge, 25% were having adequate knowledge.

S. N	Score	Likert scale	Frequency	Percentage	Mean	SD
1	0-6	Inadequate	43	43%	33.3	9.07
2	7-12	Moderate	32	32%		
3	13-18	Adequate	25	25%		

AASSOCIATION BETWEEN PRE-TEST KNOWLEDGE SCORES REGARDING MOBILE HAZARDS ON PREGNANT WOMEN AND SELECTED DEMOGRAPHICAL VARIABLES: Variable of age ($\chi^2 = 20.64$) is significant at 0.05 level hence H_2 is accepted with respect to the above variables. Variables of occupation ($\chi^2 = 3.10$), educational status ($\chi^2 = 4.83$), Trimester ($\chi^2 = 2.89$), type of family ($\chi^2 = 1.31$), family income ($\chi^2 = 0.25$), Do you use cell phone ($\chi^2 = 0$), For how many hours do you use your mobile phone ($\chi^2 = 4.58$), Which ear you use normally when you are on the phone ($\chi^2 = 5.56$), Where do you carry your cell phone ($\chi^2 = 5.03$), were not significant at 0.05 level.

Demographic Variables		Pre-Test			Df	Chi-Square value	Inference
		Inadequate	Modearte	Adequate			
Age in years	18-21 years	15	1	9	6	20.64	S
	22-25 year	19	25	7			
	26-29 years	6	6	7			
	More than 30	3	0	2			
Occupation	Employed	22	19	9	2	3.10	NS
	Unemployed	21	13	16			
Educational status	Primary	14	16	12	6	4.83	NS
	Secondary	23	11	10			
	Higher-secondary	5	5	3			
	Graduate	1	0	0			
Trimester	1 st	17	15	14	4	2.89	NS
	2 nd	20	15	8			
	3 rd	6	2	3			
Type of family	Nuclear	26	16	16	2	1.31	NS
	Joint	17	16	9			
Family Income	Below 10,000	29	20	17	2	0.25	NS
	Above 10,000	14	12	8			
Do you use cell phone	Yes	43	32	25	—	—	NS
	No	0	0	0			
For how many hours do you use your mobile phone ?	30 minutes	15	8	9	6	4.58	NS
	45 minutes	9	13	8			
	1 hour	16	8	6			
	More than 1 hour	3	3	2			
Which ear you use normally when you are on the phone?	Right	12	9	4	6	5.56	NS
	Left	23	12	13			
	Both	6	11	7			
	Not sure	1	1	1			
Where do you carry your cell phone?	Pouch	13	11	3	8	5.03	NS
	Pocket	13	10	9			
	Around neck	8	6	6			
	In bag	6	4	4			
	Any other	0	7	0			

DISCUSSION

The findings of the study have been discussed with reference to objectives, hypothesis and with the findings of other studies. According to pre test 43% were having inadequate knowledge, 32% were having Moderate knowledge, 25% were having Adequate knowledge.

A study by Auvinen A et.al (2019) conducted a prospective cohort study on Headache, tinnitus and hearing loss in the international Cohort Study of Mobile Phone Use and Health (COSMOS) in Sweden and Finland. The result shows that the participants with the highest decile of recorded call-time (average call-time >276 min per week) at baseline showed a weak, suggestive increased frequency of weekly headaches at 4-year follow-up (adjusted odds ratio 1.13, 95% confidence interval 0.95-1.34). There was no obvious gradient of weekly headache with increasing call-time (P trend 0.06). Tinnitus and hearing loss showed no association with call-time. In our study 20% pregnant women were having headache.⁸

A study by Jadia S (2018) conducted clinical study on Adverse Effect of Mobile Phone on Hearing in Healthy Individuals. The study includes 1000 participants from outpatient department of a tertiary care center over a period of one and a half years, were included in the study and were divided equally into case (>1 year use) and control (< 1 year use) groups. Out of 500 cases, maximum 233(46.6%) subjects were using mobile since last 4-6 year and 134(26.8%) were using mobile since last 7-9 year and maximum 344(68.8%) subjects were using mobile 1-3 h/day and 145(29.0%) were using mobile 4-6 h/day. In our study 20% women were suffering from hearing.⁹

A study conducted by Fatemeh Shamsi Mahmoudabadi et.al (2015) on “Use of mobile phone during pregnancy and the risk of spontaneous abortion”. A case–control study was adopted on 292 women who had an unexplained spontaneous abortion at < 14 weeks gestation and 308 pregnant women > 14 weeks’ gestation were enrolled. The result was all the data pertaining to mobile phones were different between the two groups except the use of hands free devices ($p < 0.001$) and the conclusion of the study was use of mobile phones can be related to the early spontaneous abortions. In our study 25 % pregnant women think of spontaneous abortion.¹⁰

3. CONCLUSION

Hence, it is concluded that majority of women unaware about Mobile hazards. However there is a need to improve the knowledge regarding mobile hazards among pregnant women. Various health education programs will help to enhance the knowledge regarding mobile hazards in the community.

ETHICAL APPROVAL

Since the study involved human subjects, a formal ethical approval received from institutional ethical committee.

CONFLICT OF INTEREST

The author declares no conflicts of interest.

4. FINDING

The study was not funded by any external sources and all expenses were borne by the principal investigator.

5. REFERENCES

- [1] Emerging aspect of mobile phone use, <http://www.eht-forum.org/ehj/journal/v2/pdf/ehj09005a.pdf>
- [2] <https://www.who.int/news-room/q-a-detail/what-are-the-health-risks-associated-with-mobile-phones-and-their-base-stations>
- [3] Mobile Phones Health Hazards, Risks and Dangers [Internet]. The Windows Club. 2019[cited 2020Mar13].
- [4] Kitowski, Pregnancy and Radiation Exposure [Internet]. Medium. Slow Digital;2017 [cited 2020Mar13].
- [5] Geoffrey, Mobile phone use raises children's risk of brain cancer fivefold 'The Independent'2008 September
- [6] Li DK, Odouli R, Wi S, Janevic T, Golditch I, Bracken TD, Senior R, Rankin R, Iriye R. A population based prospective cohort study of personal exposure to magnetic fields during pregnancy and the risk of miscarriage. *Epidemiology*. 2002 Jan 1;9-20.
- [7] Zarei S, Mortazavi SM, Mehdizadeh AR, Jalalipour M, Borzou S, Taeb S, Haghani M, Mortazavi SA, Shojaei-Fard MB, Nematollahi S, Alighanbari N. A challenging issue in the etiology of speech problems:the effect of maternal exposure to electromagnetic fields on speech problems in the offspring. *Journal of biomedical physics & engineering*. 2015 Sep;5(3):151.
- [8] Auvinen A, Feychting M, Ahlbom A, Hillert L, Elliott P, Schüz J, Kromhout H, Toledano MB, Johansen C, Poulsen AH, Vermeulen R. Headache, tinnitus and hearing loss in the international Cohort Study of Mobile Phone Use and Health (COSMOS) in Sweden and Finland. *International journal of epidemiology*. 2019 Oct 1;48(5):1567-79.
- [9] Jadia S, Qureshi S, Jain L, Shringirishi M. Adverse Effect of Mobile Phone on Hearing in Healthy Individuals: A Clinical Study. *Indian Journal of Otolaryngology and Head & Neck Surgery*. 2019 Nov 1;71(2):1169-73
- [10] MahmoudabadiFS, ZiaeiS, FiroozabadiM, Kazemnejad A. Use of mobile phone during pregnancy and the risk of spontaneous abortion. *Journal of Environmental Health Science and Engineering*. 2015 Dec;13 (1):34.