

# Cell Phone Habits and the Related Health Issues – A Study Conducted in Kerala

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**Abstract:- Investigated the effect of cell phone radiations in an Indian state of Kerala which has a population of about 35 million and has a teledensity equal to that of the US. We examined the common cell phone habits and the related exposure issues. The selected districts were, Alappuzha Idukki and Kozhikode. It is seen that some cell phone habits are very harmful to human health.**

**Keywords:- Cell Phone Radiation, Human Health, Cell Phone Habits.**

## I. INTRODUCTION

The electromagnetic radiations can be of two types – Ionizing (IR) and Non-Ionizing radiations (NIR). IR has sufficient energy to expel electrons from the shells. But NIR does not generally have such a capability. X- rays, Gama rays and some upper part of Ultraviolet rays have this capability. They are more dangerous than the NIR. NIR is said to be less harmful. But long-term exposure may create a lot of problems. World Health Organization's agency for research on cancer, describes cell tower radiation as "possibly carcinogenic to human [2] The heating of body parts by absorption of energy from the exposed microwave fields is termed as thermal effects. The effects due to the induction of currents, electric fields or electric dipoles inside the living matter is known as non-thermal effects. Non thermal effects are more harmful. The transfer of nutrition from blood to the tissues is through narrow capillary walls. The force exerted by the exposure fields may damage these walls. Also, the induced voltages and currents may affect the communication through the nerves. Several studies reported these facts.[3] – [20].

Investigated the effect of cell phone radiations in an Indian state of Kerala which has a population of about 35 million and has a teledensity equal to that of the US [1]. We examined the common cell phone habits and the related exposure issues. The selected districts were, Alappuzha Idukki and Kozhikode. Alappuzha is a fully coastal district with the highest population density. Idukki is a high-altitude district with a cool climate and is a part of the Western Ghats and most of its parts are ecologically sensitive. Kozhikode, on the other hand, is a district with coastal lands, plane lands and hilly forests.

Statistical analysis was done using the software SPSS. The tests conducted were T- test, independent sample test, Levine's test for equality of variance and ANOVA.

The diseases examined were

- Infertility
- Autism, Down syndrome etc. in children
- Ophthalmic problems at younger ages
- Joint pain, Rheumatic pain, Bone weakness
- Cancers and Tumors
- Sleep disorder
- Memory loss
- Headaches and related digestive issues (Migraine, IBS etc.)
- Heart Diseases, Hipper Blood pressure etc.
- Ear and hearing problems.

### ➤ Sample Size

In this study, the population size is 3.48 crores, and a confidence level of 95% and the margin of error assigned is 2.5. Z score value for the above confidence level is 1.96. Assign a standard deviation value of 5, the sample size calculated is 1537. So we took a higher value of 1539 for our study.

## II. RESULT AND DISCUSSION

We also examined if any relationships exist between cell phone habits and some diseases. We enquired about the three common habits.

- Keeping the phone close to the body
- Keeping the phone near the bed while sleeping
- Talking over phone for more than one hour per day without headphones.

### ➤ Keeping the Phone Close To the Body

About 25.84% of the people under the survey had this habit. Figure 10 shows the comparison of the percentage of the people who have this habit and suffer from the diseases with the normal social average of the diseases.

It can be found that the habitual average is higher than the normal average in the case of all the seven diseases. It shows that the people having this habit have a much higher possibility to be affected by the above diseases than normal ones. In the case of infertility, headaches and ear problems the difference is much greater.

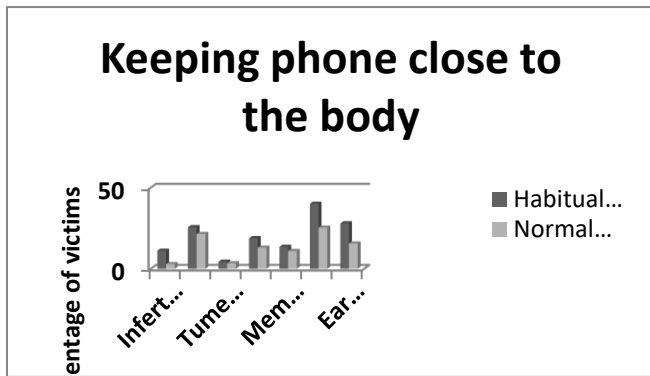


Fig 1:- comparison of habitual and normal social average for the habit of keeping the phone close to the body.

➤ *Keeping the Phone near The Bed While Sleeping*

About 14.23% is having this habit. Figure () shows the comparison with the normal ones. In the case of the six diseases, the habitual average is much higher than the normal social average. For joint pain, sleep disorder, memory loss, and headaches this habit plays a major role.

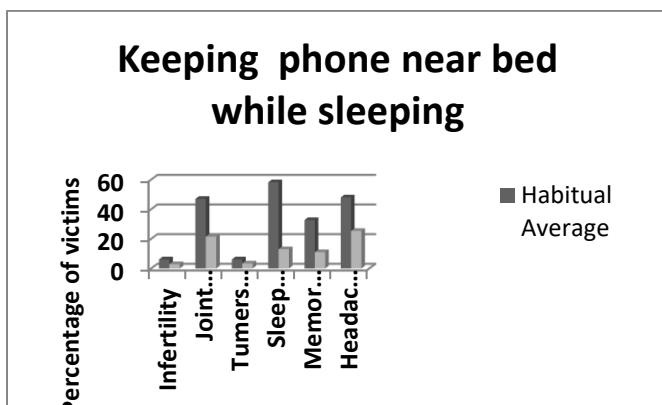


Fig 2:- comparison of habitual and normal social average for the habit of keeping the phone near bed while sleeping

➤ *Talking Over Phone for More Than One Hour per Day Without Headphones.*

About 27.47% of the people having this habit. Figure () explains the details.

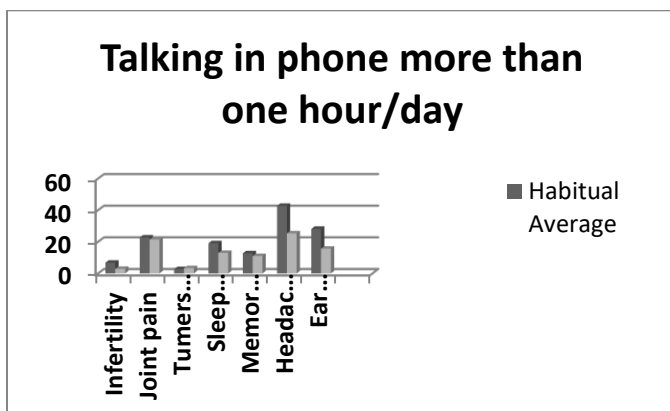


Fig 3:- comparison of habitual and normal social average for the habit talking in phone more than one hour per day.

**III. CONCLUSION**

We examined if any relationships exist between cell phone habits and some diseases. We enquired about the common habits. It has been found that three of them are very harmful to human health.

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