

The Remedial Solutions For Viral Deficiency From 4g Mobile Network

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-----ABSTRACT-----

We have seen an exponential growth in the use of technological devices like laptops, mobile phones and their necessity in today's world is very high. In present time everyone should possess a gadget or device that makes us updated for timely events that are going on around the world or for any activities that needs our involvement. In present day India is the second leading consumer of mobile phones and China is the first in this regard. In recent trends, after the launch of 4G services free of cost by reliance industries our country, India has become the largest consumer of mobile data in the world. With the excessive use of gadgets like mobile phones and other accessories the adverse effects of using it have also increased.

In this paper we will discuss about the effects that are caused to the human health due to the use of technological gadgets. Though the proper guidelines of using the technology have always been given to the people they have always neglected it.

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I. INTRODUCTION

As we have seen a gradual increase in the usage of mobile phones there are also many health hazards related to it that may affect our livelihood. Now-a-days mobile phones are the gadgets of necessity which is changing every human being's life. Mobile phones are used by a variety of people for numerous purposes.

Indian administrators are as yet centered around developing LTE's range instead of infusing more speed into their 4G administrations. We recorded 4G accessibility increments for each significant administrator throughout the most recent a half year. The majority of India's major 4G suppliers have now crossed the 65% LTE accessibility limit, and three of them are currently nearing the 70% check. Yet, we saw little development in our 4G download measurements. Truth be told, we followed slight drops in LTE speeds for three administrators.

Students use mobile phones for communication, message passing, entertainment, gaming etc. Business people use mobile phones in corporate sectors for conducting meetings, business information exchange, carrying out online transactions and other activities. Generally people use mobile phones the most for bill payments, online shopping, cab booking and for many more purposes. We can say that, mobile phones currently play a major role in our life and are almost involved in our daily activities. At present nearly anything and almost everything is possible through mobile. As the use of mobile phones has increased in our daily life it has also cursed our health with some health hazards that has become threat to our happy life. Safety to the wireless device users is a legitimate concern for their health, as most of the hazards are due to the Electromagnetic Fields or (EM Fields) radiation that are emitted from the wireless devices. There are some health issues due to the Radiofrequency Radiation or (RFR) that emits from mobile devices. The mobile communication works on signals which are transferred via electromagnetic waves through radio frequencies and microwave wavelength. The transferred signals consist of electromagnetic radiation in the form of thermal radiation which has harmful ionizing radiations. While using the mobile phones these radiations penetrate our skin and enter our body specially the skull area and interfere with the electric impulses that are caused to connect the neurons inside our brain. This can cause high blood pressure, migraines, headaches, deafness, hot ears, burning skin symptoms and fatigue. Global System for Mobile or GSM is the most popular standard for telephony in the world which communicates by searching other cells in the range. The GSM is provided to use a frequency range of 900MHz/1800MHz [1], [2] frequency but instead the telephone operators use the 850MHz/1900MHz bands regardless of the provided standards.

II. EFFECTS

A. Neuro-Psychiatric Symptoms

There are many reports concerning the exposure to RF fields during mobile phone usage and their harmful effects to daily usage [3], [4], [5] of mobile phones, such as

- Headaches, Dizziness, Nausea
- Memory loss, Mood Swings (rage), Sleep Disorders
- Fatigue, Loss of Concentration, Lack of Coordination
- Pain in hands or arms, Skin Sensation

Hockings reported the disturbances that are caused due to mobile phone usage in his paper [6]. Some of them accounted for:

- It is seen that the side of head closest to the mobile phone heats up at different periods of time which causes migraines.
- Some complained about headaches for 4 days which worsened after regular use of mobile phones. These headaches occurred at the side of the head near to the aerial of the phone.
- It is also being noted that the migraines goes off on weekends when the phone is away and it again appears in weekdays when we use the phones.

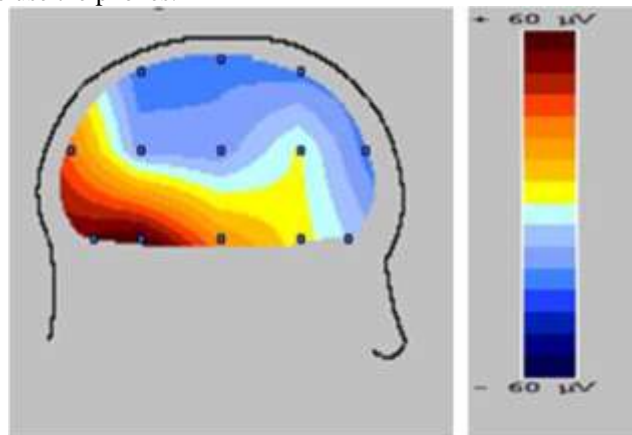


Figure 1: effects of Electromagnetic radiation in the brain.

He concluded in his paper about the symptoms that they occurred at the temporal, auricular, or occipital areas where the sensation of burnings and pain are detected.

Blanks et al [8] shows that there is some significant variability in orientation of the semicircular canals that persists in the mobile phone users which results in thermal stimulation in some persons. As mobile phones are used in noisy situations the users tightly hold the phone closest to his ears than the normal phone.

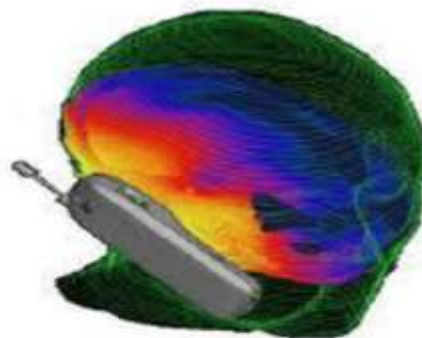


Figure 2: when cell phones are held closest to our ears.

In author's opinion [7], 5% to 8% of the total mobile users have vestibular disturbance associated with its use. Not only during day time but exposure to radiofrequency is more at night time during sleep. It is advised that regular use of mobile at late night by the teenagers may lead to personality and mood changes and create problems like ADHD [9].

B. Physical Damages

Apart from the neuro-psychiatric symptoms there are some studies regarding the physical damages that occurs to the mobile phone users are recorded. The Independent Scientific Studies [10] shows that using of

mobile phones in daily basis can cause brain tumors as the radiation of microwaves which can pass through glass, plastic and metal get absorbed by the human body. The recorded effects are:

- Opens the blood-brain barriers to toxins and viruses
 - Heat brain tissues and disrupt brain activities
 - Alters brain waves and brain chemistry
 - Causes mental confusions, headaches and memory loss
 - Causes leakage of hemoglobin from blood cells
 - Causes damage to the nerve cells of the scalp
 - Creates muscle pain, joint pain and tremors
 - Ringing in ears are induced
 - Increases the chances of asthma by producing Histamines in mast cells
 - Damages DNA
- C. Effects from other factors

At hospitals there are students who studies and also work in the same hospitals as doctors, they also carry mobile phones with them all the time. The radiation that is produced due to the mobile devices with them can also affect the patients they visit regularly as well as the electronic devices [11] that are used for medical examinations. Here is an overview on the impact of the RF radiations that affects the students in the hospital.

| Health complaint | Males | Females | P |
|------------------------|-------|---------|--------|
| Chronic headache | 14.21 | 20.00 | <0.159 |
| Impaired concentration | 34.12 | 36.00 | <0.437 |
| Impaired memory | 41.23 | 37.33 | <0.326 |
| Fatigue | 21.80 | 32.00 | <0.049 |
| Sleeplessness | 41.23 | 30.66 | <0.069 |
| Hearing problem | 21.32 | 28.00 | <0.154 |
| Skin disease | 16.11 | 18.66 | <0.365 |
| Warmth around the ear | 30.80 | 21.33 | 0.077 |
| Relation to MP use | 44.07 | 45.33 | <0.476 |

Table 1: report on daily Mobile Phone usage that affects students in hospital according to gender.

III. METHODOLOGY

A survey was conducted at College of Medicine, King Saud University, Saudi Arabia with questionnaires to investigate the effects on the usage of mobile phones.

A. Statistical Analysis

The chi-square test was implemented to analyze the daily usage of mobile phones with other health parameters. The test was conducted on 330 students by sampling method. From among all the students 286 were completed which is 86.6% of the total where 73.77% were male subjects and 26.22% were female subjects. Patients with trauma due to accidents, hypertension and chronic sinusitis were excluded.

There are various new innovations liable to be connected - however measures haven't been pounded out yet for each of the 5G conventions. Higher-recurrence groups - 3.5GHz (gigahertz) to 26GHz and past - have a great deal of limit yet their shorter wavelengths mean their range is bring down - they're all the more effortlessly hindered by physical articles.

IV. RESULTS

Most of the admitted test subjects were having knowledge about the effects of using mobile phones. Among all 76.92% subjects carried only one mobile and the rest 23.08% had more than one mobile phone at their possession. For almost 55.94% of the total were found to have an average usage of 30min or less; for

27.97% the average usage ranged from 30-60mins; 11.53% were ranging from 60-90mins; and for 4.54% the usage lasted for more than 90mins. 30.77% reported that their health condition was very good, 62.24% reported assessed that they were good and 6.99% reported as having fair health conditions. Mostly 83.57% of the total subjects were reported with some illness of their health. Among them, 16.08% claimed to have Headaches, 24.48% were having Fatigue, and 34.27% were having Impaired Concentration. Most prevalent symptoms that were reported were 40.56% for Memory Disturbance, 38.8% for Sleeplessness and 23.07% were having hearing problems. The reported subjects with symptoms did no longer need any medication or health checkups.

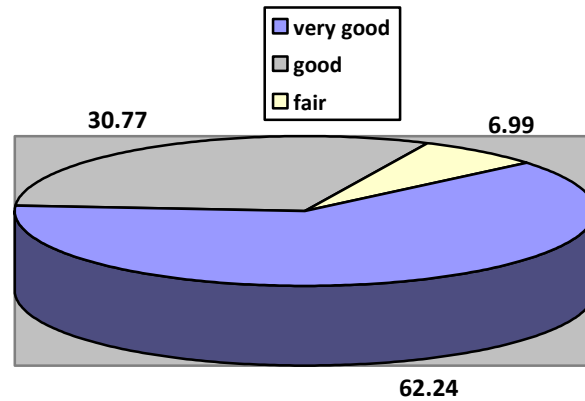


Figure 3: self rated health condition.

This chart shows the students who are monitored under the study rated themselves with their previous health and after the usage of mobile phones.

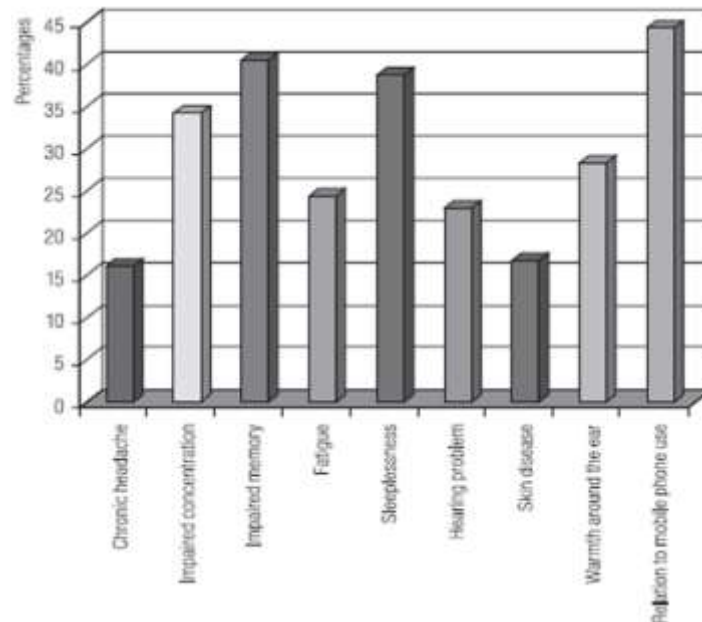


Figure 4: Health complaint reported by medical students. For daily mobile phone usage the health complaints are compared.

V. DISCUSSION

The society and the health professionals together should conduct such campaigns which intensifies health education activities regarding the use of mobile phones by children and teenagers. The study conducted by us indicates that there are an increased percentage of students who will be exposed to these kind of radiations and suggest the risks regarding various health issues that may happen due to regular and longer period of usage of mobile phones. As we found that mobile phones are the necessary part of their life hence, the proper use of mobile phones must be discussed with them and their parents regarding the issues of health that may arise in future to them. Studies that are carried out are not enough to reach the conclusion because of insufficient time to test the upcoming new communication technologies [12].

The quickest current 4G versatile systems offer around 45Mbps (megabits every second) by and large, despite the fact that the business is as yet cheerful of accomplishing 1Gbps (gigabit every second = 1,000Mbps).

Chipmaker Qualcomm figures 5G could accomplish perusing and download speeds around 10 to 20 times quicker in genuine world (rather than lab) conditions.

VI. CONCLUSION

Observation and studies have shown that cell phone addiction is affecting our young generation as well as adults. People are getting aware of their personal habits while interacting with the devices, and some people believe that the surrounding of direct communication will abolish with time. Some people said that they did not want to be disconnected from their family at any time and quickly respond to their needs, thus they need to keep their mobile phones with them. While others believed that the use of technology has decreased our ability to communicate with each other in person or face to face. Overall we can conclude that in our current generation many people know about the affects of using mobile phones though they are choosing to use it knowing the negative consequences as it is a necessary part of our life.

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