



Effects Of Mobile Tower Radiations And Health Impacts: A Case Study

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Abstract

All forms of life on earth have been living amidst radiation through the ages. Mobile Phone usage has been rapidly spread in India and to provide proper coverage, numbers of cell towers are also increasing; on radiation emissions from mobile towers are huge due to its dense installations and unscientific proliferation.

Effects of Mobile Tower Radiations are also investigated in many countries; mobile towers have mushroomed in a haphazard way. So, in this paper, we have discussed Effects of Mobile Tower Radiations and their health impacts on humankind and living beings. Experts said one cannot rule out health concerns from mobile towers and the government needs to step in.

Key words: Mobile Tower, Radiations.

1- INTRODUCTION

Radiation is present everywhere. All living beings are exposed to the Sun, which is the largest radiation source. Many common known sources of radiation with advancement of technology include radio, transistor, television, microwave oven, mobile handset, Mobile Towers and many more.

The Radio Frequency (RF) energy is a non-ionizing radiation like radiation from visible light, infrared radiation, and other forms of electromagnetic radiation with relatively low frequencies. Cell phone is a very low level of radio frequency energy. The type of energy emitted is non-ionizing – means it does not cause damage to chemical bonds or DNA.

A cell phone transmits 1 to 2 Watt of power in the frequency range of 824 - 849 MHz (CDMA), 890 - 915 MHz (GSM900) and 1710 – 1780 MHz (GSM1800). A cell phone has a SAR (Specific Absorption Rate) rating. Recently, in India SAR limit for cell phones is adopted as 1.6W/Kg which is actually for 6 minutes per day usage.

Excessive cellphone use can cause the deadliest of health hazards among users, from hearing loss to neuro-endocrine disruption, and from hormonal imbalance to cancer.

Radiation from mobile towers and phones are covered under Indian Wireless Telegraph Act, 1933; Indian Telegraph Act, 1885; and Telecom Regulatory Authority of India Act, 1997; none of the Acts cover the regulation of health impacts of radiation on living beings.

Study indicates that the Electro-Magnetic Radiations (EMR) interfere with the biological systems; besides, impact on human beings has also been reported.

Central Pollution Control Board (CPCB) and National Green Tribunal (NGT) have said that cell-tower radiations are not a pollutant or a health hazard if cell towers strictly adhere to the norms that have been laid down by World Health Organization and the department of telecommunication.

2- RADIATION FROM CELLPHONES AND MOBILE TOWERS

Mobile Tower is a triangular / cone shaped metal structure which is more than nine meter in height on which 3 or more antennas are fixed, the structural height may depend on whether it is fixed on land or on a building.

Mobile Tower Antennas are the source of radiation in a mobile tower. However, a telecom infrastructure consists of electronic (active) and non-electronic infrastructure. Electronic infrastructure includes base tower station, microwave radio equipment, switches, antennas, transceivers for signal processing and transmission. Non-electronic infrastructure includes tower, shelter, air-conditioning equipment, diesel electric generator, battery, electrical supply, technical premises. For a good quality wireless communication, Mobile Tower Base Stations (MTBS) are an inevitable part of the telecom infrastructure system.

3- RULES FOR INSTALLING THE MOBILE TOWERS

For installing the mobile Tower followings are rules currently exist for determination and need of users.

1. Permission from the local Governing body is required with or without some license fees.
2. Permission from the D.O.T. is required.
3. Rules and Regulations framed by the T.R.A.I. have to be followed and maintained.
4. Based on the need and number of the users/customers
5. TRAI ensure that Quality service is being provided to the customer/user also monitor and conduct the survey about the quality of service and also issue reservations and directions to improve the services and quality of the services.
6. Normally the Radiating frequency is 900 MHz but to cover the large and more powerful signal some B.T.S. also operating on the 1800 MHz. and also on 2100 MHz.

4- INDIAN SCENARIO

According to Trai, there are 500,000 telecom towers in India at present, and it is

estimated that another 100,000 towers are required to cater to India's mobile user base which is approaching the one billion mark. India currently has the second-largest mobile phone user in the world with more than 975 million users.

In India, mobile tower radiation testing and monitoring are regulated by the Telecom Enforcement Resource & Monitoring (TERM) cell of the telecom ministry.

So far, no conclusive relationship has been established to relate radiation from mobile towers exclusively with health hazards, however, as a precautionary measure various standards for radiation from mobile towers have been formulated by Department of Telecom (DoT), Government of India in India, based on International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines (issued by Germany & adopted by UK, Australia, Malaysia, India and Korea).

Over the past few years, a number of health activists and resident organisations have started opposing the erection of telecom towers on rooftops of houses and in densely populated areas, claiming that radiation from such installations causes serious health risks. Consequent to the revision of EMF radiation norms by Department of Telecommunications, Indian Standards are now 10 times more stringent than many countries (like USA, Canada and Australia) in the world which follow ICNIRP guidelines.

A number of countries have specified their own radiation levels keeping in mind the environmental and physiological factors. India's apex pollution control body has warned of radiation danger from mobile towers, while accepting it has no authority to stop it. any authority to dismantle mobile towers or disconnect the telecommunication service but held that noise and air emissions from power generator sets attached to mobile towers are under its regulation.

Telecom operators also have claimed that about 7,000-10,000 sites have been locked

or shut down across cities due to radiation fears, leading to call drops.

The CPCB and NGT endorsed the authority of DOT and its enforcement wing, Telecom Enforcement and Resource Monitoring (TERM) Cell, in addressing complaints about cell tower radiation.

CPCB ruled out any action on the tower, stating that as long as radiation standards set by DoT are being followed, the pollution board leaves all mobile tower-related complaints to be addressed by TERM cells. Being an essential service, sealing of BTS Towers/disconnection of electricity may not be resorted to without the consent of the respective TERM cell of the DOT.

While stating that essential services such as telecom cannot be interrupted in case of complaint and TERM to decide problems, NGT, in its order on a complaint against mobile tower radiations, upheld World Health Organization (WHO) guidelines in this regard categorizing existing permitted emission norms as safe for humans.

5- EFFECTS OF MOBILE TOWER RADIATIONS ON HUMAN AND WILDLIFE

Radiation from cell phones and towers is set to become as major a source of pollution as air, water and noise. Skin rashes, hearing problems, sleeplessness, migraines, fatigue, lack of concentration, fearfulness and skin dehydration are among the problems reported by people living in the vicinity of mobile phone towers, studies also show that mobile tower radiation may not only be capable of causing cancer, but also neurotic disorders like Parkinson's and Alzheimer's, by numbers of towers which are to be found in every other building in the city. When a human body is exposed to the electromagnetic radiation, it absorbs radiation, because human body contains 70% of liquid. It is similar to that of cooking in the microwave oven.

The human height is much greater than the wavelength of the cell tower transmitting frequencies, so there will be multiple

resonances in the body, which creates localized heating inside the body. This results in boils, drying up the fluids around eyes, brain, joints, heart, abdomen, etc.

Environment ministry had formed an expert committee in August 2010, submitted its report in October 2011. One of the recommendations was to introduce a special law for protection of urban flora and fauna from emerging threats such as electro-magnetic frequency radiations.

The most common complaint of patients is that after cell phone use, the ears become hot. Many come with complaints of tinnitus, where there is buzzing in the ears. This results in irritability and lack of concentration.

The pollution watchdog said the issue of direct concern to pollution control boards is noise and air pollution from power generator sets attached to mobile towers, for which there are provisions under the Environment Protection Act, 1986.

6- RESULTS AND CONCLUSION

The use of cell phone is increasing tremendously day-by-day in India, but most of the people of have none knowledge how the cell phones impact on human health. Radiation from cell phone is responsible for many diseases Numbers of research studies to show the probability of health impacts from radiations releasing from mobile towers.

Increasing ambient radiation levels in public places from various sources have deleterious effects on human health and psychological well-being of the people, it is necessary to regulate and control them. Prolonged exposure to radiation may cause DNA mutations and so are very dangerous for fetuses.

So, one of the measures to minimize health impacts is precaution and there, government has to step in to develop a uniform policy for installation of mobile towers. There has to be requirement of some consolidation and rigid planning by government regarding mobile towers.

Need of more research to transform mobile radio communication to an efficient, secure and convenient system useful for the welfare and positive advancement to public and for the global society. Government and regulating authority should take necessary steps for the mobile industry with proper regulations.

Environmental activists and experts say that citizens and the government must act not only against conventional sources of pollution, but also radiation from cell towers and gadgets.

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