

Ways to Use Mobile Phones Safely

Mrs. Bhumika S. Zalavadia

Head of Department

Computer Department

Atmiya Institute of Technology and Science for Diploma Studies-Rajkot, Gujarat, India

bszalavadia@aits.edu.in

Abstract

In today's modern life it is almost impossible to imagine the life without mobile phones. As today's life is very fast and vibrant, most of all the tasks of routine life are carried out with the help of mobile phones. From home to market, schools to colleges, local shops to industries, government sectors to private sectors everywhere mobile is there. There are so many inventions in mobile world and as we know today's mobile phones are very smart in features. But it is very much important to use mobile phones safely as unsafe use of mobile phones may harm your physical and mental status. Each user should know how to use mobile phones safely as it is connected with our routine use. There are so many advantages of mobile phones as so many tasks become very easy to do with mobile phones but at the same time its unsafe use may create serious problems too.

Keywords: Mobile, Radiation, Signal, Location, Bluetooth, GSM, IMEI, Internet, Wi-Fi

I. INTRODUCTION

Mobile communication is the wireless communication in which data and voice are transmitted and received using a type of wave known as microwave. As this is a wireless communication, it allows mobility. You can transmit and receive the data while you are moving from one place to another [15]. We are using cellular and digital cordless telephones, pagers, telephone answering devices, cell phones satellite communication and walky-talky. All these are the example of wireless communication. Telephones used in

wireless communication are available in two forms; cordless phones and mobile phones. In all mobile phone systems, a geographic region is divided up into *cells*. Mobile phones are also called *cell* phones. GSM (Global System for Mobile), GPRS (General Packet Radio Service), CDMA (Code Division Multiple Access) etc technologies are used for mobile communication.

According to the survey done in 2016, there were 7.4 billion mobile users worldwide [16]. There is an electromagnetic radiation by mobile phones in the frequency range of 450MHz to 2100 MHz. Radiation is the energy that is travelling through space in the form of waves or particles [2]. This radiation should be as low as possible. High radiation can harm our physical and mental status.

II. TIPS FOR SAFE MOBILE USE

A. Keep mobile phones away from your body

The amount of radiation absorbed by your head and body decreases by keeping your mobile phones away from your body. Generally we are not following this point. People always keep their mobile phones in hands or pocket or purse etc. Don't put the phone in your pocket or clip it to your belt. We always find people around us who are always busy in doing something in their mobile phones [3]. Today all most all the businesses are carried out with communication with mobile phones. So it is observed that business men are always

busy using their mobile phones and it is very harmful to their mind and body [8][7].

B. Use Headset or Speaker While Talking

Use a hands-free device with low power like a headset [13]. We should use speaker phone while talking. This removes the phone from right beside your brain. So there will be less effect of radiation on our body and mind [17].

C. Do not talk more, Use text messages more

Mobile phones emit less radiation when sending text messages rather than voice communications means calls [16]. So if it is very much necessary to call a person, then use calling. If your purpose can be solved with text message, then use text messages to contact a person rather than calls [18].

D. Don't Keep Mobile Phone under Pillow while Sleeping

It is observed that most of the people keep their mobile phones under pillow while sleeping [1]. This is very dangerous for health. Even when a phone is on and not in use, there is still little radiation. Never do this. While sleeping mobile phones should be away from your body. You can keep the ringer volume high so that you can come to know when any call comes.

E. Call only when Signal is Strong if Possible

In your mobile phone signal bars are there which shows strength of the mobile signals. If signal bars are less, phone has to try harder to broadcast its signal [3]. When signals are weak, radiation exposure is more which affects your body parts. People generally do not take care about how much signals are strong [9].

F. Restrict the use of Mobile for Children

We should allow our children to use mobile phone only in emergency. Children's bodies have less resistance to radiation compared to adults. Children's brains absorb more radiation than adults almost twice as much as those of adults [19][14][21]. Today parents allow their children to play games or watch movies in mobile phones for long time. This may lead to cell phone-related cancers in children [12][4].

G. Use 112 Emergency Number when No Coverage

112 is the emergency number you can use even you don't have coverage in your mobile phone. This is very useful facility in our mobile phones. For example you are in lift where no coverage is available and you need to contact anyone in emergency, you can use this number [28].

H. Keep the length of your calls short

People have very bad habit to talk for long time unnecessarily. While calling we should talk less because the actual use of mobile phone is to contact a person when there is a need in real. We always forget this fact and lengthen the period of a call unnecessarily. It is proven that a two minute call may alter our brain's natural electrical activity for up to an hour afterward [11]. If we think financially, by making the call length we can save money too.

I. Do not share carelessly

Today generally most of the people use social networking sites like Facebook, Twitter etc through their mobile phones. People are habituate to share their location, video, photos on Internet among their friends. But we should be careful while sharing our photos, text, videos and location to the trustworthy people only [20]. Once they are posted can be copied and pasted elsewhere for malicious purpose [10][3].

J. Do not move while talking

Generally people have bad habit to move while talking on mobile phones. If you keep moving around with your call, more radiation is emitted because the phone needs to keep track of you with the changes in position. This increase in radiation may harm your body and mind. We should try to not use cell phone in such places where our position is not stationary like in elevators, cars, trains or planes except emergencies.

K. Use the mobile applications carefully

Most of the people are not aware about the internal working the application which are installed in their mobile phones. Some applications need to access your contact list, location, messages or calendar then you try to install it. For example, the mobile application true caller is used to know the caller's name when there is a call from any unknown number. This application needs to use our contact list for our working. If an application asks to access your location, contact list, calendar or messages then try to know if the application really needs that information to function [26]. If you find any doubt, don't use such applications. Your information may be used for any wrong purpose by the owner of such applications. Install the applications from well recognized app store only [22].

L. Be responsible while responding

Sometimes we get call or message from some unknown number. For example, many times we get message that we won some number of money and to get it we should send our bank account number, address and mobile number on some cell number. Don't reply to any such malicious messages you receive. Don't answer calls from numbers you don't know. This type of message may take your information and hack your email account or bank account [18].

M. Do not use mobile phones while driving

While driving our position is changing continuously. So more radiation is emitted as the phone needs to keep track of you with the change in position. It will also increase the risk of accident or near-accident situation [5][6][2].

III. COMMON TIPS FOR MOBILE USERS

1. Disable Bluetooth, if not in use. People generally start Bluetooth to transfer the data with their friends and then forget to make it off [17]. If your Bluetooth is on, any mobile hacker may get into your mobile phone and may steal your secret information.
2. Always use a mobile hanging ribbon or thread or strip for safety.
3. Install Anti-virus Software. We access Internet and surf various websites through our mobile phones from where we download many files. With such files there is a possibility that our mobile phone may get infected by network threats like virus, worms, Trojans etc. These network threats may damage the hardware of our mobile phone or applications installed. To protect our mobile phone from such threats we should install any anti-virus software either free or paid [24].
4. GSM Phones have a unique IMEI (International Mobile Equipment Identity) number. This number is written on the back panel of a mobile handset where battery is fitted [19]. This number is used to track the location of a mobile phone. When a call is made from a mobile phone, its unique IMEI number is sent to telecom operator for device identification. As every single mobile phone has its own unique identification number. Telecom operators can easily locate and track stolen mobile phones. You can dial *#06# to find IMEI number of your mobile handset and record it at any safe place so that if your mobile phone gets stolen by anyone you can give this number to police station where it can be used to find your phone [25].
5. Use your phone's security lock code, if it is available. This will protect our mobile handset from any unauthorized access.
6. We should buy a mobile phone from such sellers only who can give us a bill. Never buy a phone unless you know the seller is the owner; can they produce the original packaging or a receipt.
7. When you come to know that your mobile phone is lost or stolen, immediately report the police station. Inform your service provider about this so that it can stop all the services provide to your number.
8. Generally we use "http" while surfing any website on Internet. But we should use "https" in url instead of "http" which adds more security.
9. Add a password to your phone. As only owner of the mobile phone means you know the password, any other person can't use your phone in your absence [16].

10. You can use a "find your phone tool". This makes it easy to find your phone if you lose it and help anyone who finds it to connect with you [16].
11. In our mobile phone there is a facility that whenever it finds any Wi-Fi network or Bluetooth device available, it automatically gets connected with it. We should not allow automatic connections with available Wi-Fi networks and Bluetooth devices. This type of automatic connections may steal your secured information [27].
12. People may have Wi-Fi network with wireless router in their house or apartment. At such places there is more radiation. So, keep it in a little-used room and away from the bedroom.
13. Pregnant women should keep cell and wireless phones away from their abdomen. It may harm the mother and baby too [23].

CONCLUSION

Today we all accept that without mobile phones our life is almost impossible. There are so many advantages of using mobile phones. It makes the entire world very small and narrow. At any time, at any place you may be available to your relatives. But people should not forget about its side effects if they use it carelessly. If we use it with some facts in mind as discussed above, it may be helpful to our life.

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Mrs. Bhumika S. Zalavadia is currently working as Head of Computer Department at Atmiya Institute of Technology and Science for Diploma Studies, Rajkot. She got her B.E. degree in computer engineering from Sardar Patel University, V.V.Nagar in 2001. She got her M.Tech. degree in 2011 from Karnataka State University. She has total 14 years of experience. She had total ten paper publications in international journals. She is the member of Women Development Cell at her institute. She had written Six books used as textbook or reference book.