Running head: CELL PHONE RADIATION 1

Cell Phone Radiation: The Technology with a Downfall

Charlotte Rose Fox

Thomas Nelson Community College

Author’s Note

This paper was prepared for English 112 College Composition II,

taught by Professor Arnold

CELL PHONE RADIATION 2

Abstract

Alexander Graham Bell was famously known for his invention of the telephone in 1876. His invention changed the way in which the world communicated. About a decade later, a man by the name of Martin Cooper created the first portable handset which would evolve into what we now call the cell phone. These two gentlemen played huge roles in creating the age of technology. In the 21st Century, cell phones are everywhere. Many households have one for each family member and most of the business world has become dependent on them. With cell phones being used so often and by so many people, health concerns have surfaced. These concern have mainly focused on whether or not the radiation from cell phones cause cancer or other health problems. There are many who believe that the radiation emitted from cell phones has no impact on the users’ health, but studies and research shows that it does.

CELL PHONE RADIATION 3

Cell Phone Radiation:

The Technology with a Downfall

Alexander Graham Bell was famously known for his invention of the telephone in 1876. His invention changed the way in which the world communicated. About a decade later, a man by the name of Martin Cooper created the first portable handset which would evolve into what we now call the cell phone. These two gentlemen played huge roles in creating the age of technology. In the 21st Century, cell phones are everywhere. Many households have one for each family member and most of the business world has become dependent on them. With cell phones being used so often and by so many people, health concerns have surfaced. These concern have mainly focused on whether or not the radiation from cell phones cause cancer or other health problems. There are many who believe that the radiation emitted from cell phones has no impact on the users’ health, but perhaps the evidence should speak for itself.

In response to the concerns of cell phone radiation causing cancer, the Federal Communication Commission (FCC) made a statement on their web site stating that “there is no scientific evidence that wireless phone usage can lead to cancer” then follows it saying that there is ongoing research to monitor any effects of cell phone radiation (2011). The FCC did not cite where they got the evidence for their claim, but because of their line of work, it could be assumed that they have a great deal of bias on the issue. This possible bias leaves the FCC as a source that would not be credible on the issue at hand. This is only one example of several similar sources that say that there is no effect of mobile phone radiation on a person’s health.

CELL PHONE RADIATION 4

The controversy over whether or not cell phone radiation is harmful to our health is mainly focused on what type of radiation is being emitted. Radiation is defined as energy traveling through space. According to *Scientific American*, cell phones use

non-ionizing [electromagnetic] radiation…Cell phone radiation falls into the same band of non-ionizing [electromagnetic] radio frequency as microwaves used to heat or cook food. But…unlike microwaves, cell phones do not release enough radiation or energy to damage DNA or genetic material, which can lead to cancer.

(Wenner, 2008)

The article makes a clear point that the radiation produced by cell phones does not have enough energy to cause cancer. Perhaps it was a mistake though to compare cell phone radiation to that of a microwave, because it paints a gruesome picture of radio waves slowly cooking a human brain. Clearly this is an exaggerated image of what actually happens. Non-ionized electromagnetic radiation is very weak and only causes minor heating of nearby tissue. Though the cell phone does not have enough power to immediately cause damage to cells, it leaves the question of whether or not there may be long term effects.

Globally, a vast majority of people have accessibility to a mobile phone, if not own one themselves. With the constant improvements to technology people rely on their phones more than ever. Now people can even search the internet as well as call and text on their phones. In a society that always wants to be in touch, people are exposed to their phones more and more. In 2011, Thomas Nelson Community College researcher, Charlotte Fox conducted an anonymous survey on the usage of cell phones within the

CELL PHONE RADIATION 5

college’s student body. Her findings are displayed in Table 1:

Table 1

*Note.* The data on cell phone use are from a survey conducted by Charlotte Rose Fox at Thomas Nelson Community College on December 1st of 2011.

The data shows that everyone surveyed owned a cell phone and used it at least once a day. *Table 1* also shows that 90 percent of the population carried their cell phone with them at all times of the day. This provides a good population sample and evidence of how exposed people are to the radiation emitted from cell phones. This validates that the radiation would be harmful even if it was due to extended exposure because people always have their phones with them.



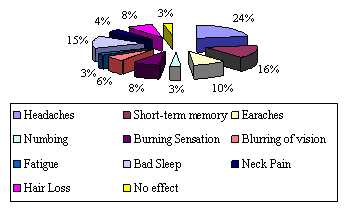
There have been many studies conducted to find a relationship between cell phone radiation and cancer. Researchers, Ganguly et al. (2011), stated that some “recent studies have proved a definite relationship between use of mobile phones leading to occurrence of brain and salivary gland tumors” (p. 370). With the cell phone being used most closely to the person’s head it makes sense that the brain and salivary glands would be most

CELL PHONE RADIATION 6

affected. The electromagnetic radiation is absorbed by the tissues of a persons body where a cell phone is closely held. The relationship shows that cell phones must release enough non-ionizing radiation to effect people. It is very possible that in short term studies, the very small amount of radiation gradually released over time would not show damage. Though if the exposure is constant and long term, the cell phone radiation could eventually cause damage that could lead to cancer.

A group of researchers did a study in Bangladesh, South Asia on cell phone radiation and its impact on human health. The case study was done over a five year period from 2005 to 2010. Their findings are shown in Figure 1:

Figure 1 **3000 General Public versus Disease**



*Note*. The data on cell phone radiation and the effects on human health are adapted from “Radiation Exposure of Cell Phones and Its Impact on Human Health” by Iftekhar Uddin & Jannatul Ferdous, 2005-2010, *Journal of Theoretical and Applied Information Technology,* 19(½), 15-21. Retrieved from http://web.ebscohost.com.ezproxy.vccs.edu

CELL PHONE RADIATION 7

The data shown in Figure 1 display a variety of health problems. The study covered a large population which serves for well rounded results. Most of the symptoms are closely associated with the head area where the cell phone is held. This data may show that the radiation absorbed into these tissues cause these short term effects in addition to cancer and tumors. Though cell phones only emit low levels of radiation, it makes sense that it is able to affect the soft tissues of the brain. It is important to protect our most essential organ. Though it is clear that cell phone radiation has a negative impact on our health, there are ways to limit our exposure to radiation and still keep up with the evolving technologies.

Some realistic ways to limit exposure to cell phone radiation would be to carry the phone in a bag such as a purse or brief case instead of in a pants pocket. This way the phone is closely accessible without being close to the body. Also wearing a Bluetooth greatly minimizes the amount of radiation that reaches the head. As seen in Table 1, only one person answered question number four with a yes saying that they use a Bluetooth. In a world of technology it can be impossible to avoid everything that is negative for the health, but it is important to stay informed and healthy.

Alexander Graham Bell and Martin Cooper created inventions that changed the world of communication. Cell phones are used by most of the world’s population for a large variety of reasons and most people depend on them in their everyday life. Unfortunately, every great thing has a downfall. The non-ionizing electromagnetic radiation emitted from cell phones cause a variety of both long and short term health issues. Limit cell phone radiation by using the phone in a “smart phone” manner.

CELL PHONE RADIATION 8

References

Federal Communications Commissions. (2011). Is there any evidence that cell phones cause cancer? Retrieved from <http://www.fcc.gov/encyclopedia/faqs-wireless>- phones#evidence

Fox, C. R. (2011, December 1). Survey results of cell phone usage. Table 1

Ganguly, S. S., Mukhopadhayay, S. K., & Guha, S. K. (2011). Stress to Human Health Due to Electromagnetic Radiation Emitted from Mobile Phone. *International Journal Of Bio-Resource & Stress Management*, 2(3), 369-372.

Uddin, A., & Ferdous, J. (2010). Radiation Exposure of Cell Phones and Its Impact on Human Health - A Case Study in South Asia (Bangladesh). *Journal Of Theoretical & Applied Information Technology*, 19(1/2), 15-21. Retrieved from http://web.ebscohost.com.ezproxy.vccs.edu

Wenner, M. (2008, November 21). Fact or fiction? Cell phones can cause brain cancer. *Scientific American*. Retrieved from http://www.scientificamerican.com/article