REFLECTIONS OF TECHNOLOGY ON CHILDREN AND THE NURSING APPROACH

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ABSTRACT

Today, technology is quite developed. Technology is used in all areas of our lives. Especially mobile phones and computers are in our lives. In addition to the positive effects of technological instruments, there are also radiation, electromagnetic wave emission and electromagnetic field generation. For this reason, there may be effects on human health. Especially it has effects on children. But there is also a need for further studies in this areas. Nursing approach is important. This article was made as a review. There are electromagnetic field, cell phones, computers, children and their parents, nursing approach in this article. This article aims to provide information about the reflections of technology on children and nursing approach.

Key words: Reflections of Technology, Children, Human Health, Nursing Approach

1. INTRODUCTION

As the global population grows, the number of different movements and actions necessary to feed this population also grows. Technological movements arise from these needs (Haktanir, 2001). Although developments that have emerged in industry and technology in the last 50 years facilitate our lives, they also generate certain negative effects (Kilickap and Erdis, 2013). These negative concerns affect children first (Akbulut, 2013). This article aims to provide information about the reflections of technology on children and nursing approach.

2. ELECTROMAGNETIC FIELD

Electromagnetic field indicates waves that are generated by an electric field and magnetic field that emit waves in open space or a physical place (Sarmasik, et. al., 2012). An electrical field is formed as a result of the repulsion and attraction forces generated by electrical loads. The presence of an electrical load is enough to form an electric field. Therefore, electrical appliances that are not operating, thus not consuming any electrical power, but remaining connected to the power supply may still generate electricity. Electrical loads should move to form a magnetic field. Thus, the appliances that are not working but remain connected to a power socket do not form a magnetic field (Guner, 2014).

Technology also highlights the term “electromagnetic field”. Electronic devices used frequently in daily life may generate some interactions between the magnetic field, the human body, and the outside world (Sarmasik et al., 2012). Electricity has become the most important and irreplaceable element of business life thanks to the advances it provides in manufacturing, moving, and in other activities. In addition to these positive effects, electroshocks that occur due to direct or indirect contact, explosions due to overload, injuries or death occurring due to residual currents are also possible. Electricity also has invisible effects that are generated by the electromagnetic field (Guner, 2014).

The presence of electromagnetic waves became well known after cell phones became widely used (Haktanir, 2001). However, many electronic appliances used in daily life such as microwave ovens, food processors, television, electric blanket, computer monitor, electric shavers, and photocopy machine also generate an electromagnetic field (Duzgun, 2009). Some published literature reports that electromagnetic waves distort the electromagnetic balance of all living creatures, and these waves may cause permanent damages (Sarmasik et al., 2012).

3. CELL PHONES

Computers and cell phones, which are now used frequently following developments in science and technology, negatively affect environmental and human health (Kerimoglu and Boztepe, 2015). Our bodies absorb the electromagnetic waves emitted from the cell phones when we talk on the phone. The amount of
radiation, i.e., the electromagnetic field affecting the body, is designated the specific absorption rate (SAR). Cell phones have SAR values, which should be below 1 W/kg (Gonener, 2006).

Use of cell phones has become more common in recent years; the cell phone is now an irreplaceable device in our society (Haktanir, 2001). However, the increase in the use of cell phones is accompanied by certain health-related concerns (Kerimoglu and Boztepe, 2015). The negative effect of cell phones that provide many advantages in daily life has been discussed. The most important topic in the discussions is whether cell phones emit radio frequency waves that can cause ionization and can lead to cancer (Toyran, 2008).

In particular, cell phones are now used more often because children and adolescents desire to have one, which increases the usage rate. Many children use cell phones to talk, text, and access the Internet (Kerimoglu and Boztepe, 2015). Because radiation can penetrate deeper in children compared with adults, learning disability, concentration disorders, and aggressive behaviors may result (Gonener, 2006).

4. COMPUTERS

Computers are children's favorite entertainment means. When children spend most of their time on a computer, parents cannot establish communication with their children, and children move away from natural life (Cakir, 2013). Information can be accessed more easily, quickly, and economically thanks to the Internet (Tari et al., 2010).

Games that aim not only to entertain but also to teach are called serious games. It is well known that people of all ages enjoy activities called games. Moreover, it was realized that learning became permanent at the end of these activities. Educational programs for children and adults now include well-designed computer games. Serious games help individuals develop certain skills such as problem solving, developing strategies, trusting, and analytical thinking (Cakir, 2013). Technology constitutes a significant place in language development. Appropriate programs can encourage children to form longer sentences and talk more fluently. Placing the CD into the driver, clicking, and using the keyboard support the development of fine motor skills and eye hand coordination (Akkoyunlu and Tugrul, 2002).

Children may also be affected negatively, which in turn affects the families and all society, if computers are not used properly. The increase in the number of games containing violence concerns families. Physical aggression may be seen in children playing games that include violence. These children may lose their empathy skills and become individuals that are prone to violence. The excessive interest in these computer games may encourage children to escape from school and perform robbery to purchase games. In addition to the effects of violence, TV and computer usage durations that may be up to five hours a day increase the risk of obesity, as indicated by some studies. Moreover, light and color changes in certain computer games negatively affect the photosensitive epilepsy patients (Cakir, 2013).

5. REASONS WHY CHILDREN ARE AFFECTED MORE

Children are affected by radio frequency much more than the adults because their brains have a thinner cranium and more water and ions; thus, they are more conductive and they absorb more radio frequency waves than adults do (Kerimoglu and Boztepe, 2015). Scientists have examined the effects of radio frequency energy on children and have urged that studies should be conducted to examine the effects of cell phones on leukemia incidence (Toyran, 2008). Certain literature suggests that magnetic fields are ineffective or have minor effects during childhood, but emphasize that children should be protected against possible risks (Kilickap and Erdis, 2013).

6. CHILDREN AND THEIR PARENTS

Parents complain about their children demanding much more time for computer games and showing no interest in studying. This suggests that computer games capture the attention of children and encourage them to play games (Cakir, 2013). Educational technologists should create programs that do not harm children, and these experts should be supported and children should be encouraged and permitted to use these programs (Isicibasi, 2011).

Studies have reported that parental approaches affect children. Strong models and conscious guidance provided by mothers and fathers positively affect the development of children (Akkoyunlu and Tugrul, 2002).

Families should guide their children in computer use. Contents of the games should be considered when selecting games, and parents should play these games with their children. Children should be informed about the negative aspects of games that they should not play in a way that does not hurt their feelings (Cakir, 2013). Children should not be permitted to use cell phones for except emergencies, and these phones should be kept away from pregnant women to ensure that the fetus’ organs are not damaged.

Children should use media tools such as television and internet when they need them. However, these tools should be used less frequently, and children should be encouraged to perform physical activities like games or sport. Thus, their social behavior will be enhanced, and their physical and psychological health will be preserved (Kerimoglu and Boztepe, 2015).
7. NURSING APPROACH

All professionals, and especially pediatric nurses who work with children and their parents, have important roles in preventing the risks that arise from the negative effects of the appliances that produce electromagnetic fields.

Nurses should report the characteristics of cell phones as part of protecting patients and their families, provide education about reducing the negative effects of electromagnetic radiation, and help raise awareness about this issue. Thus, they can assist children and their families in maintaining their health. Nurses can provide verbal information about protection from harms of electromagnetic waves, and they can also prepare posters and written documents (Kerimoglu and Boztepe, 2015).

As a result although effects of technology concern all society, children are most affected, as in many cases. Thus, it is important for nurses to provide education including all effects of technology appropriate to the age and interests of children to raise awareness among children and adolescents, and to protect them from harm.

Moreover, pediatric nurses should determine short- and long-term goals to ensure that technology is used properly and effectively, and to prevent the misuse of technology that may harm the children. After determining these goals, they should use all methods that are used in professional nursing services: planning actions, implementing and evaluating them, and with the concept of providing a scientific solution to this relevant problem.

REFERENCES