

PROBLEM OF USING MOBILE PHONES BY CHILDREN AGED 7 TO 10 YEARS

Vanja Ničković¹, Dragana Jevtić², Radoje Jevtić³ and Jovan Ničković³

The increased use of mobile phones in the last several years by children leads to a growing exposure to electromagnetic radiation which is emitted by mobile phones to child's head; therefore, it is necessary to determine the health risk for children exposed to mobile phones. For that reason, it is necessary to get insight into some important aspects of using mobile phones by children such as: average duration of one call, duration of all calls in one day, number of sent messages in one day, but also the number of children using the mobile phone. This paper presents the results of a three-year investigation related to the aforesaid aspects, conducted on the sample of 120 examinees - children attending I to IV grades in the elementary school „Čele Kula”. *Acta Medica Medianae 2010, Vol49(4):36-38.*

Key words: mobile phone, investigation, children

University of Priština temporarily seated in Kosovska Mitrovica, Serbia¹
Elementary School „Čele Kula”, Niš, Serbia²
Secondary Vocational Electrotechnical School „Nikola Tesla”, Niš³

Contact: Radoje Jevtić
SVES „Nikola Tesla”
Aleksandra Medvedeva 18
18000 Niš, Srbija
E-mail: milan.jvtc@gmail.com

Introduction

The increased use of using mobile phones in the last several years, especially by children of school age is highly evident. It is considered that the number of mobile phones used in the world is over two billions from long time ago. Besides a growing number of mobile phone users, the number of mobile operators offering various services is rising, too. It is considered today that modern life is almost impossible to imagine without the use of mobile phones in all the fields of life, such as science, sport, economy, industry, culture etc.

The most important notion regarding the mobile phones is that they communicate by high frequency electromagnetic waves from the central base station, and antennas are most frequently placed on the top of some tower, building or some other high structure. During the mobile phone use the high frequency electromagnetic waves penetrate the human body, especially the head, heart, lungs, skin, gonads, etc. Therefore, a logical question is posed if there are dangerous influences as well as dangerous consequences, for which there are different attitudes based on numerous studies and researches.

Mobile phones are especially dangerous for children at the preschool and school ages. Numerous researches and studies stress that children should not use the mobile phones at all as the thin bones of the skull, skin and subcutaneous tissue do not pose any barrier against the penetration of electromagnetic radiation. Many scientists have had difficulties in their researches of this type so far, because the use of mobile phones became wide in the late 1990s of the last century (1,4).

Methods

The three-year long investigation was conducted in the elementary school „Čele Kula” in Niš as a supplement to the elaboration of the Master's thesis entitled „The distribution of electromagnetic field mobile communications frequencies in the human”. The investigation was performed on a randomly chosen sample of 120 examinees - children of different sex, and it included three aspects important for the mobile phone use: average duration of one call, total duration of all calls in one day and the number of sent messages in one day. The investigation was performed for the first time in 2007 and was repeated in 2008 and 2009 (5,6).

Results and discussion

The first part of the conducted investigation referred to the total number of mobile phones used by the tested children; it was designed in the way to show, by grade and age of children, (aged from I to IV grades of elementary school matching ages from 7 to 10) how many of the tested children, whose total number was 120 for all four grades, used mobile phones.

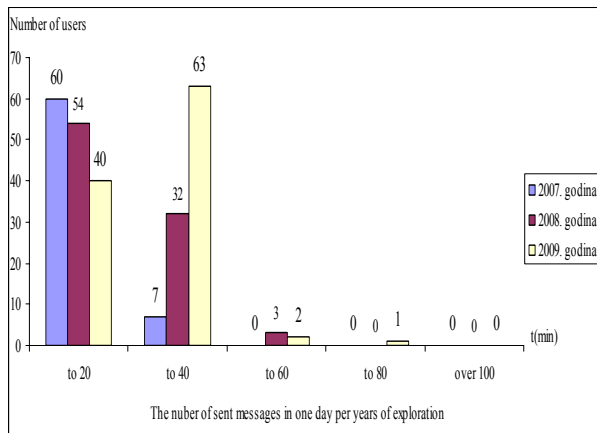


Diagram 3. The number of sent messages in one day by years of investigation

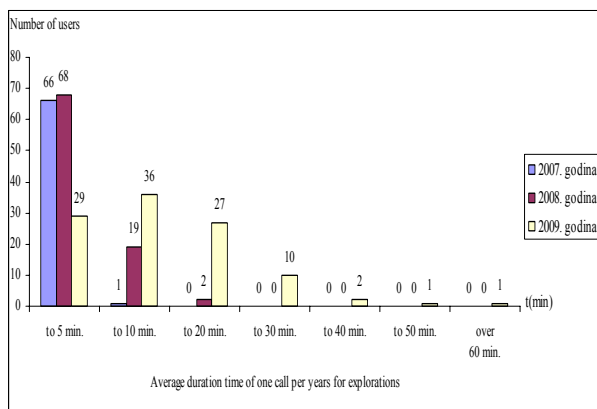


Diagram 1. Average duration of one call by years of investigation

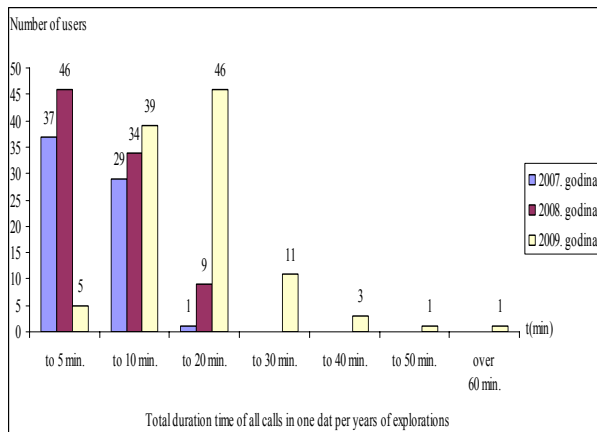


Diagram 2. Total duration of all calls in one day by years of investigation

The next part of the investigation performed described every individual year, and it involved three aspects of the children's use of mobile phones: average duration of one call, total duration of all calls in one day and the number of sent messages in one day. All the obtained results presented the subjective evaluation given by the tested children, which was checked through the realized traffic. Diagrams 1, 2 and 3 show the comparative results of the investigation for 2007, 2008 and 2009.

Table 1. The number of mobile phones used by children of four grades during the three-year-long investigation

Year	Grade	Number of pupils	Number of mobile phones
2007	I	30	9
	II	30	11
	III	30	19
	IV	30	28
			67 (55,8%)
2008	I	30	14
	II	30	19
	III	30	26
	IV	30	30
			89 (74,16%)
2009	I	30	20
	II	30	26
	III	30	30
	IV	30	30
			106(88,33%)

Table 1 clearly shows that the number of mobile phones as well as the number of children using mobile phones continuously increases in all grades, which is especially alarming when children of the first grade are concerned. The number of children not having mobile phones is considerably less than the number of those using it, and the average duration of one call and total duration of all calls in one day increases, which can be seen in Diagrams 1 and 2. Also, the number of messages sent during one day was considerably increased, especially in 2009, which is presented in Diagram 3. Almost an identical situation can be seen in the majority of schools in Niš. Equally, the increased use of mobile phones by school children has been reported in the majority of European countries. (England, Sweden etc.).

The obtained results undoubtedly point to increased use of mobile phones by children aged of 7 to 10 years, which, according to numerous findings, studies and researches should not be the case. In addition, it is very important to emphasize that the quality of modern life is considerably jeopardized as we live in electrosmog (7-13).

Conclusion

Judging from several aspects (health, ethical, social), the use of mobile phones by children aged 7 to 10 years is completely unnecessary and potentially risky. Therefore, it is necessary to educate parents who buy mobile phones to their children, as numerous investigations and studies undoubtedly demonstrate that electro-magnetic radiation of mobile phones penetrate much stronger through the head of children aged 7 to 10 than through the head of an adult user, which can be particularly seen through the thermal effects caused by this devices. There are even opinions that using mobile phones should be forbidden to children attending elementary school, which should be certainly considered and possibly applied (14,15).

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PROBLEM KORIŠĆENJA MOBILNIH TELEFONA KOD DECE OD 7 DO 10 GODINA

Vanja Ničković, Dragana Jevtić, Radoje Jevtić i Jovan Ničković

Veliki porast upotrebe mobilnih telefona u poslednjih nekoliko godina od strane dece dovodi do povećanog izlaganja elektromagnetnom zračenju koje mobilni telefoni emituju na dečiju glavu. Neophodno je utvrditi zdravstveni rizik od upotrebe mobilnih telefona na decu. Iz tog razloga, potrebno je sagledati neke bitne aspekte korišćenja mobilnih telefona od strane dece, kao što su prosečno vreme trajanja jednog razgovora, ukupno vreme trajanja svih razgovora u toku jednog dana i broj poslatih poruka u toku jednog dana, kao i broj dece koja koriste mobilni telefon. U radu su prikazani rezultati trogodišnjeg ispitivanja sprovedenog na uzorku od 120 ispitanika-deteta u razdoblju od I do IV razreda Osnovne škole „Čele Kula“ vezani za navedene aspekte. *Acta Medica Medianae* 2010,49(4):36-38.

Ključne reči: mobilni telefon, istraživanje, deca