Exploring the Possibility of Headache Exposure among Mobile Phone Users Aged (18-25) Years

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Abstract

Background: Many health reports have focused on the symptoms and health effects caused by mobile phone usage around the world, including headaches. Headaches are common among the Iraqi people, and when exposed to low-frequency radiation from mobile phone use for long hours, this may cause headaches.

Objective: To determine the possibility of headache exposure among mobile phone users in relation to age, gender and various aspects of mobile and to find out any significant association between the duration of mobile phone usage per day with duration and intensity of headache.

Patients and Methods: An analytical cross-sectional study was conducted in Baquba city during the 1st December 2016 to 31 December 2017 to obtain a random sample of young adults aged 18 – 25 years. A questionnaire was created to collect data. This questionnaire consists of three parts, the first part includes age and gender and the second part about mobile-related information. While the third part is about headaches information related to headaches. Initial approval was taken from every to participating. Data, sorted and arranged, and statistical tables were used to represent the results. Statistical data were analyzed using the statistical packages for social Sciences (SPSS) program version (20). Chi-square and t-test were applied and p-value of <0.05 was taken to be as a statistical significance.

Results: The current study shows that mobile phone usage significantly increases the rate of exposure to headaches by (65%). The highest rate of exposure to headaches (86.1%) was significantly among those who owned the mobile for four years and more. The study showed that the highest rate of headaches (% 72.6) was significantly found in persons who use the mobile mainly to surf social networking and the headache rate (73.8%) was significantly higher among those who use mobile phones for (3-< 4) hours per day.

Conclusion: It has been concluded from this study that the use of mobile phones increases the of exposure to headaches, especially when the duration of use during the day increases, as well as the duration of headache exposure of more than two hours and intensity significantly associated with increasing the mean number of hours per day.

Key words: Headache, Mobile Phone, Headache Duration, Headache Intensity.

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Introduction

The communications have evolved dramatically in recent years, including mobile phone [1]. Because global technology and its changes play a key role in the lives of

every individual, especially young people, where mobile phones are considered as the mission of the communication tool because the mobile phone is heavily used in Iraq, especially in the category of youth after the war (2003), where mobile phones are available for almost all age groups and Iraqis are considered a frequent mobile phone users [3]. Young people are more inclined to use mobile phones for activities other than calls from the older generation, because at this stage they are more likely to change trends in fashion and lifestyle [3].

Many health reports that have focused on the symptoms and health adverse around the world have found that most of the symptoms complained of by mobile phone users are headaches, ear warmth, dizziness and difficulty of concentration [4].

Neurologically, the radiation emitted from mobile phones mostly affects the head region [5]; thus, in this study the headache has been focused only because it is the commonest symptom of the symptoms that have been mentioned above [6]. Headache is a common condition of pain in one or more places in the head occurs all over the world[6].

In epidemiological studies primary headache is one of the most common symptoms reported by medical authorities [7]. They have become an integral part of society [2]. It is not only for calls and sending SMS but it is also an important means of social communication through Facebook, Twitter and Viper networking, and youths are increasingly using it in Arab countries, including Iraq [2].

In our time, the phone has become a personal computer and general concerns about possible adverse effects on human health from electromagnetic fields emitted from it have been raised [8] .It is known that headaches affect the levels of daily activity and quality of life, and in the long term increases the economic burden on the society, as people in the Middle Eastern countries including Iraq are often exposed to the primary headache [9]. The mobile phone allows many actions such as using different applications to access the internet, social media and play games which are an emerging factor that can enhance the likelihood of exposure to negative health effects such as headaches [10].

Self-symptoms such as headaches have been reported by mobile phone users in previous studies, especially when the duration of call increases [11]; thus, the radiation emitted from the mobile phone is probably possible and reports indicate that people who have been professionally exposed to low-frequency radio levels complained of the heaviness of the head and headache [12]. This study aims to determine the possibility of headache among mobile phone users in relation to age, gender and various aspects of mobile and to find out any significant association between the duration of mobile phone usage per day with duration and intensity of headache.

Patients and Methods

An analytical cross-sectional study was conducted in Baquba city during the 1st December 2016 to 31 December 2017 to

obtain a random sample of young adults aged 18 – 25 years who were attending Al-Tahreer and Al- Takia primary care centers for immunization with either flu vaccine or viral hepatitis vaccine, the total number of the sample is (200) subjects.

In order to truly gather information, a questionnaire was created. This questionnaire consists of three parts, the first part includes two items [age and gender], and the second part is about mobile-related information, which consists of [3] items [the duration of mobile phone owning, common use of mobile phone, number of hours of mobile use per day]. While the third part is about headaches information related to headaches which consists of [3] items [history of exposure to headaches, duration of headache, intensity of headache]. Initial approval to participate in the gathering of information was taken from every participant prior to the presentation of the questionnaire. We have been asked about the exposure to headaches that have nothing to do with influenza, infection, or head injury before the first 7 days of taking information from every Participants.

Statistical analysis

After data collection, they were sorted and arranged, and statistical tables were used to represent frequencies, percentages, means and standard deviations of the results according to the nature of the statistical analysis. Statistical data were analyzed using the statistical packages for social Sciences (SPSS) program version [20]. Chi-square and t- test were applied for comparison between the studied variables and rate of the headache. The p-value of <0.05 was taken to be as a statistical significance.

Results

The current study shows that mobile phone usage increases the rate of exposure to headaches significantly and they accounted for (65%) among as shown in Figure(1).

Table (1) reveals that the exposure rate for headaches (65.4) was slightly higher for mobile phone users in the age group (20-25) than the younger age group (18-20) (64.7%) with no significant differences ($p \geq 0.05$). Also, the rate of exposure to headaches was higher in females (66%) than males (63.8%) and there was no significant difference ($p \geq 0.05$) between mobile phones usage and gender.

In Table (2) the results of the study show that the highest rate of exposure to headaches (86.1%) was with those people who owned the mobile for four years and more. While the lowest rate (33.3%) was among people who owned the mobile less than a year, where a high significant difference was found between long-term mobile ownership and Headaches. The highest rate of headaches (% 72.6) was found in the persons who use the mobile mainly to surf social networking and the lowest rate (52.4%) was in people who used the mobile mainly to call and send messages with no significant difference and as shown in Table (2).

Table (2) shows the highest rate of headache (73.8%) was among persons who use mobile phones for (3-< 4) hours per day. While the lowest rate of headaches (38.5%)

was among people who use mobile phones for a period ranging from (1-< 2) hours, since the use of mobile phones for long periods of time is significantly increases the rate of exposure to headaches.

In Table (3), the study shows that lasting of headaches in mobile phone users for more than two hours, occurs as a result of the use of the mobile with a mean (8.47) hours a day with a highly significant difference. This study shows that exposure to severe headaches in mobile phone users occurs as a result of the use of the mobile with a mean (8.00) hours per day and there is a high statistical relationship between the intensity of headaches and the use of mobile for long periods and as shown in Table (3).

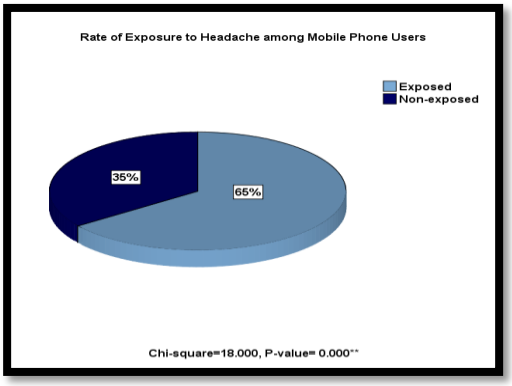

Figure (1): Effect of Effect of sodium nitrite volumes on colour intensity.

Table (1): Rate of exposure to headache among mobile phone users in relation to age and gender.

Variables, Total= 200		Rate	Significance
Age	18 - 20 years	65.4	Chi-square= 0.011 p-value= 0.916 (NS)
	21 - 25 years	64.7	
Gender	Males	63.8	Chi-square= 0.107 p-value= 0.744 (NS)
	Females	66	

*NS= Non-significant

Table (2): Rates of exposure to headache among mobile phone users in relation to various aspects of mobile.

Variables, Total= 200		Rate	Significance
Duration of mobile phone use/ years	Less than one year	33.3	Chi-square= 35.317 p-value=0.000**
	One year	47.1	
	Two years	59.1	
	Three years	68.8	
	Four years and more	86.1	
Main purpose of mobile phone use	Calling	50	Chi-square= 4.640 p-value= 0.026*
	Non-call purposes	68.5	
Duration of mobile usage per day/ hours	1 - < 2 hours	38.5	Chi-square= 7.844 p-value= 0.049*
	2 - < 3 hours	58.2	
	3 - < 4 hours	73.8	
	Over 5 hours	65.4	

*Highly Significant; * = Significant

Table (3): Distribution of mobile users with headache in relation to some variables according to duration of mobile use per day.

Variables	Response	Duration of mobile use per day Total= 130		Significance
		No.	Mean±SD	
Headache Duration	< 1 hour	45	2.26±0.96	t-test= 101.491 p-value= 0.000**
	1-2 hours	30	4.86±1.25	
	> 2 hours	55	8.47±3.10	
	Total	130	5.49±3.49	
Headache Intensity	Mild	36	3.16±1.96	t-test= 17.208 p-value= 0.000**
	Moderate	74	5.94±3.41	
	Severe	20	8.00±3.64	
	Total	130	5.49±3.49	

Discussion

It was observed that the risk of exposure to headache attack had increased in mobile phone users, this finding was consistent with other works [3, 8, 10]. The rate of headache exposure in young mobile users aged between (18 -20) years was slightly higher than these elders. The reason of that, the headache has been reduced due to the increased age of studied subjects [12]. No significant difference was found in mobile phone users who reported a headache with the age group, this similar to the work of Cho MK [13]. The results of the current study did not indicate a statistical significant difference among mobile phone users who exposed to headache in relation to gender, this finding was demonstrated in another study [13]. The vast majority of subjects 81.1% who owning mobile phone had significantly experienced headaches, this finding was comparable in a study conducted in Saudi Arabia in a sample of young adults attending dentistry and medical colleges by Bader and Santosh [10]. They found that duration of mobile use in years was found to be statistically significant with exposure to headache. It has been revealed that the use of mobile phones mainly for non- call purposes like surfing social networking sites may cause headaches significantly among study subjects. This was in agreement with another Arabian study by Amal, *et al*, they found that the headache was higher with those who use mobile phones for non- call purposes other than calling [14]. These young adults seem to spend most of their time making and receiving calls and messages with others using social networking sites. In a study conducted in Malaysia has been included that 78% of the subjects said they spend most of their time on social media [15].

It has been observed that the high rate of headache 73.8% was among mobile phone users who spent 3 to < 4 hours on the mobile screen. This finding was comparable to study conducted in Saudi Arabia reported that most

adult students used smartphones for 2-4 hours a day, and the headache was the most common symptom [16]. Also, it was found in several cross-sectional studies in different countries that the risk of headaches, increased in those who have higher daily hours on the mobile phone [8]. The study revealed that the prolonged use of mobile phone causes headache significantly, and this conclusion was observed in the Saudi study, which found that overuse of mobile phone use was heavily associated with headaches [14]. It has been noted that the duration of headaches for more than two hours, occurs significantly in young adults who using mobile phone with a mean 8.47 hours. This result was in accordance with a Turkish study carried out by Seden [17]. They concluded that the duration of the headache was more among high mobile phone users. Regarding the relationship between the duration of mobile phone use and the intensity of headaches was found to be increased significantly as hours of mobile phone usage increases. The researchers found that the total time spent daily on the mobile phone had a strong relationship with the intensity of pain including headache and neck pain [17].

Conclusion

It has been concluded from this study that the use of mobile phones increases the possibility of exposure to headaches, especially when the duration of use during the day increases, as well as the duration of headache exposure of more than two hours and intensity significantly associated with increasing the mean number of hours per day.

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