

Original article

The Effect of Mobile Phone Use on The Prevalence of Headaches among Female Students at the Faculty of Education, Abu Issa, University of Zawia, Libya

Al Basher Alafi^{1*} , Subhiyah Kanz² , Fatimah Ali² , Khadeejah Al migheerb² , Hanan Omran² , Amaal Kasheem² 

¹Department of Zoology, Faculty of Science, Zawia University, Libya

²Department of Biology, Faculty of Education, Abu Issa, Zawia University, Libya

Email. al.alajeeli@zu.edu.ly

Abstract

The study aimed to find out the effect of mobile phone use and duration of use on the prevalence of headaches for a sample size of (118) female students from the Faculty of Education, Abu Issa. The study reached a number of results, which are represented in the presence of an effect of mobile phone use and duration of daily use on the prevalence of various headache cases. It recorded a rate of 49.15%, 31.35%, and 19.49% for the incidence of migraines, tension headaches, and cluster headaches, respectively, among female students. 82.20% of the participating recorded using more than 5 hours per day, and the hours of use according to the age group of female students from (18-20), (21-24) years also recorded 40.67%, 41.52%, respectively. This confirms that most and most of the female students use mobile phones during the day for excessive hours. This is consistent with many studies whose results confirmed that excessive use between 5 and 8 hours a day is considered an addiction and has health risks and repercussions on users. The study recommended paying attention and conducting scientific and specialized studies on the effects of mobile phone use on all segments of society, especially higher education levels, and spreading awareness through available means of the risks and repercussions of mobile phone use on public health.

Keywords: Mobile Phone, Female Students, Headaches, Age Groups, Prevalence Rate.

Introduction

With the rapid progress achieved by man in various fields, especially in contemporary communications technology, to keep pace with development and life requirements to achieve means of comfort and luxury, and the speed of achieving many daily services, communication, and access to everything that happens in the world in terms of various events and developments in various fields, and what accompanied it in terms of increasing demand and use of various electronic devices, especially digital and smart mobile phones, Which is estimated to have a global ownership rate among the population in one of the developed and manufactured countries of about 90%, for social communication and entertainment, especially among the youth [1], as it is manufactured with advanced and modern technologies on a large scale among international companies to meet all the multiple needs of users, which has increased the growth rates of its global market in various countries [2].

The widespread use of long hours during the day among the population, especially young people, is one of the basic features of the modern digital age [3]. The increasing demand among different age groups for using mobile phones and their applications may result in some risks and health repercussions that may be hidden from many. Some studies have indicated that 48% of university students are considered addicted to using electronic screens and mobile phones, and some studies have found that 43.7% of teenagers have headache attacks due to long periods of exposure to electronic screens [1], [4]. as they represent the youth and university students in particular from the oldest age groups among the population for using mobile and smart phones.

Various electronic screens at higher education levels to view scientific research and developments in the field of scientific specialization [3]. The inevitability imposed on students at various levels of education, especially higher education, to use modern and advanced technologies to keep pace with scientific development and to learn about the various school curricula has increased the hours of daily use and viewing, which has resulted in health risks represented in non-specific symptoms such as various headache attacks, anxiety, excessive tension, depression, neck and eye pain, dizziness, obesity, skin symptoms, pain in the lower back of the head, and neck stiffness [5-8]. Excessive use of mobile and smart phones has negative effects and multiple undesirable behavioral patterns such as disruption of daily physical activity, cognitive decline, and migraines.[9] Light rays emitted from screens and various electronic devices inhibit the secretion of melatonin and disrupt circadian rhythms, which results in poor sleep quality and a decrease in the degree of physical activity in individuals [10].

Many studies have been conducted to determine whether migraines and tension headaches are related to the hours of use of mobile phones, smartphones, and the Internet, and their results found that a high percentage of users suffer from an increase in headache attacks, reaching 39.6% of the number of participants [11], where the degree and severity of the injury depended on the method of use, whether it was calls and their duration or watching, to the degree of exposure to the different levels and intensity of the emitted electromagnetic fields [2]. Headache is one of the most common physical

disorders that is often diagnosed using traditional and incorrect methods and treated inadequately. The number of cases of it has exceeded one billion people around the world. Despite the great progress that has been made in understanding its pathological mechanisms, it still represents a complex and diverse health condition, especially migraine. This is due to diagnostic methods that rely on a set of symptoms reported by the affected individual himself, which represent traditional subjective methods, as they do not give the true content of the neurobiological and psychological complexity of headaches, which results in weak diagnostic results that are useless for describing the condition and treatment [12].

Because of this complexity in the nature of headaches and their underlying biological processes, some modern technologies have emerged in molecular sciences, proteomics, and metabolic sciences, which represent effective tools for detecting headache mechanisms, restoring metabolic and immune balance, achieving appropriate and accurate treatment for recurrent attacks, and reducing the burden of medical conditions on many individuals [13]. Many studies that have addressed this aspect have recommended raising the level of health awareness among the population, especially youth, university students and students of different educational levels, regarding the sound and safe ways to use screens, electronic devices and mobile phones, due to the health risks that result from excessive use, and enhancing the role of awareness in improving the quality of life for various members of society in light of the rapid development and contemporary digital technology [14]. This study aims to find out the effect of mobile phone use on the prevalence of headaches among a sample of female students at the College of Education, Abu Issa, University of Zawia.

Methods

The study was conducted on a random sample of (118) female students from the Faculty of Education, Abu Issa, at the University of Zawia, ranging in age from 18 to 24 years, in the period extending from April 2026 to June 2026, where data related to the study were collected through a form prepared by the researchers that includes a set of questions and through a direct interview with each student who took the required data, for the type of headache and the number of hours of mobile phone use during the day. The data were tabulated into statistical tables appropriate to the nature of the study and the data, and by using appropriate statistical methods using the SPSS program to obtain the possible results of the effect of mobile phone use on the prevalence of headaches among female students during the school year.

Results

Through the data in Table (1), which represents the distribution of the percentage, number and type of headache cases, we find that the highest percentage of headache cases was recorded in migraines with 58 cases, representing 49.15% of the total number of participating in the study, followed by tension headaches with 37 headache cases, representing 31.35% of the sample, while cluster headaches were recorded with 23 cases, representing 19.49% Of the From the total number of sample members.

Table (1) Distribution of the percentage, number of cases, and type of headaches among female students

Type of headache	number	Percentage
Migraine	58	49.15
tension headache	37	31.35
cluster headache	23	19.49
Total	118	100

As for the percentage and number of hours of daily use of the mobile phone among female students, as shown in Table (2), It has been found that most of them use the phone for more than 5 hours a day, as 97 cases were recorded, representing 82.20% of the total number of participating in the study, and 17.79% of were recorded using the phone for less than 3 hours a day. This confirms that the majority of had excessive use of mobile phones during the day.

Table (2) Percentage and number of hours of daily mobile phone use among female students

Daily use hours	number	Percentage
Less than 3 hours	21	17.79
From 5 hours or more	97	82.20
Total	118	100

While the percentage, number and type of headache cases were recorded according to the age group of as shown in Table (3), we note that the age group of (21---- 24) years recorded for (31) female students a rate of 26.27%, suffering from migraine attacks while using the mobile phone. The age group of (18----- 20) years recorded 27 cases, or 22.88%, suffering from migraines, while the age group of (18----- 20) years recorded 20 cases, or 16.95% of the total number. The age group of (21 - ---- 24) years was also recorded for 17 cases, or 14.40%, who were suffering from tension headaches while using the mobile phone, and 14 cases were recorded, or 11.86% were suffering from cluster headaches in the age group of (21 ----- 24) years. While the age group of (18 ---- 20) years recorded 9 cases, or 7.62%, feeling cluster headaches while using the mobile phone during the day.

Table (3) Percentage, number and type of headache cases by age group among female students

Type of headache	Age groups			
	18----- 20		21----- 24	
	Number	percentage	Number	Percentage
Migraine	27	22.88	31	26.27
Tension headache	20	16.95	17	14.40
Cluster headache	9	7.62	14	11.86
Total	56	47.45	62	52.54

As for the data recorded in Table (4), on the percentage and number of hours of mobile phone use according to the age group participating in the study, we find that the age group of (21 ----- 24) years recorded 49 cases, or 41.52%, followed by the age group of (18 ----- 20) years, with 48 cases, or 40.67% Some female students use mobile phones for less than 5 hours a day, while the age group of (21----- 24) years recorded 13 cases, representing 11.01%, using the phone for less than 3 hours a day, and 8 cases, representing 6.78% for the age group of (18----20) using the phone for less than 3 hours a day, This is evidence that the study participants used mobile phones for excessive hours during the day for both age groups and different classroom levels

Table (4) Percentage and number of hours of daily mobile phone use among female students

Age group	Daily phone usage hours			
	Less than 3 hours		From 5 hours and above	
	number	Percentage	Number	Percentage
18 ----- 20	8	6.78	48	40.67
21 ----- 24	13	11.01	49	41.52
Total	21	17.79	97	82.20

Discussion

Through the results of the study on the effect of mobile phone use on the prevalence of headaches among participating female students, the highest prevalence was recorded for migraines at 49.15%, followed by tension headaches at 31.35%, and cluster headaches at 19.49%. These findings are consistent with the study [8], which was conducted on a sample of university students during periods of academic pressure requiring prolonged reading, studying, and extended use of electronic screens and mobile phones. Such activities often result in neck bending, back pain, occipital headaches, and lateral head pain. The results further confirmed that the overall prevalence of headaches among students reached 88.5%. Similarly, a study [15] conducted on Saudi university students across different colleges reported that 77.9% of participants suffered from headaches. This aligns with another study [9], which found that students using mobile phones and applications for entertainment experienced recurrent migraine attacks, breathing disorders, decreased sleep quality, and insomnia.

Moreover, study [11] investigated the relationship between migraines, tension headaches, and mobile phone/Internet use, reporting that 49% of those with tension headaches used mobile phones, with female students representing 39.6% of participants. Study [16] revealed that 92.6% of the population sample suffered from headaches, with females accounting for 80.8% of cases compared to males. In another study [17], 31% of participants reported cluster headaches due to excessive mobile phone use. Regarding daily usage, the current study found that 82.20% of female students used mobile phones for more than five hours per day, leading to recurring headache attacks. This is consistent with study [14], which showed that young men and women using mobile phones and electronic screens for more than eight hours daily—mostly females—experienced multiple health, physical, and psychological effects. Similarly, study [18] reported prevalence rates of 8.7% for migraines and 14.6% for tension headaches among students who used electronic screens for only two hours daily. Study [19] confirmed that tension headaches were the most common type among students (38%), compared to migraines (10%), and were linked to excessive mobile phone use exceeding four hours daily, with females most affected (29.7%). Study [10] also found that students spending 2–9 hours daily on electronic screens had a headache prevalence of 74.28%, closely related to screen time duration. Study [1] reported that university students using mobile phones for more than four hours daily had an addiction rate of 36.6%, resulting in physical and psychological health risks such as palpitations, anxiety, depression, sadness, and poor sleep quality.

In terms of age groups, the current study found that female students aged 18–20 years and 21–24 years recorded migraine prevalence rates of 26.27% and 22.88%, respectively, with tension headaches at 16.94% and 14.40%, and cluster headaches at 7.62% and 11.86%. This agrees with study [10], which confirmed that students aged 19–23 years had a high migraine prevalence (74.28%) due to prolonged screen exposure. Study [20] reported that females aged 17–18 years experienced headache symptoms and sleep disorders due to excessive mobile phone use, reaching 71.8% of participants. Study [19] also confirmed that students aged 20–25 years suffered from constant headaches, often requiring painkillers, with prevalence rates four times higher in females compared to males, possibly due to hormonal fluctuations and menstrual cycles. Study [15] similarly confirmed that most female students aged 18–25 years suffered from headaches due to excessive use of electronic devices. Finally, study [14] conducted on Austrian youth aged 18–30 years found that excessive

use of electronic screens and smartphones for gaming had significant health, physical, and psychological repercussions, particularly among females compared to males.

Conclusion

The results of the study showed that excessive use of mobile phones has effects on the prevalence of headaches among female students, as the hours of daily use exceeded 5 hours, reaching 82.20% of the total number of female students participating in the study, and reached 40.67%, 41.52% according to the age group of (18-20), (21-24) years, respectively, who use mobile phones for excessive hours. The study recommended intensifying and conducting specialized scientific studies on multiple samples from different segments of society, especially higher education students, to prevent their excessive use of smartphones and electronic screens, and spreading awareness through various available means of the dangers of excessive use of mobile phones and electronic screens and their repercussions on public health.

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Conflicts of Interest

The authors declare no conflicts of interest.

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