INFORMATION AND COMMUNICATION TECHNOLOGY TOOLS AND STUDENTS’ HEALTHCARE IN TERTIARY INSTITUTIONS IN EDO STATE

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Abstract
The global outbreak of Covid-19 in late 2019 and early 2020 altered how information and communication technology platforms and devices were used. Virtual learning was incorporated into traditional classrooms by schools, digital marketing platforms were purchased by marketers, online transactions increased in financial services, online ticketing was purchased by transportation companies, and so forth. People adopted digital technology as a way of life as a result of this. Most locals became heavy users as a result. Has this had a negative impact on Edo State citizens’ access to healthcare in the post-COVID-19 era? The goal of this study is to determine whether digital technologies have any detrimental effects on students’ access to healthcare in Edo State’s institutions of higher learning. Three research questions and hypotheses were presented and developed to direct this investigation, and the survey research methodology was chosen. For this study, 900 respondents were chosen using the basic random sample approach. The Digital Technology and Healthcare Questionnaire is the tool used to gather data (DTFHQ). At the 0.05 level of significance, the hypotheses were tested using the Analysis of Variance (ANOVA). It was shown that students’ health in postsecondary institutions is significantly impacted by the usage of ICT technologies. It is advised that the usage of ICT tools in many spheres of life be moderated in light of these findings. Furthermore, it is advised that medical professionals and home managers conduct an awareness training regarding the potential health risks associated with the use of ICT technologies.

Keywords: Digital Technology, Post-Covid-19, Healthcare, Students. Information and Communication Technology

Introduction
The internet, social media, smartphone applications, and other internet-based communication technology has become a daily occurrence for people worldwide. The rapid advancements in technology and the popularization of various devices and applications have led to a broad adoption of cutting-edge technologies for communication and information (ICT) in both private and work life. This has implied rapid shifts in being exposed profiles in the general public over a long time. Higher education institutions are accustomed to using computers and the Internet for a variety of tasks. The internet has become an integral part of our everyday lives, serving as a platform for a multitude of purposes such as communication,
education, entertainment, and virtual communities. Its impact on the everyday activities of students is particularly noteworthy. Although there are many positive aspects of the Internet, including information sharing, interpersonal interaction, and stress reduction, overuse of these tools can have undesirable effects on one's wellbeing, together with dependence and disruption of daily activities. As such, the Internet represents a serious public health concern.

**Literature Review**

Every day, for a variety of reasons, people all over the world utilise phones, computers, and the internet as information and communication tools. Young people were among the vast majority of users of tech-related tools. Adolescents are really the ones who use technology for communication and information use (computers, phones, and the internet) the most often. We might not be aware, though, that our use of these technological devices has turned into an addiction rather than merely a habit. Additionally, the excessive growth in mental illnesses among individuals worldwide might be attributed to this addiction. It is a mental addiction that makes it difficult to perform several aspects of daily living. An abundance of psychological and mental conditions are linked to excessive internet use.

Perhaps the most significant breakthroughs that has altered global technology for communication and information networks is the mobile phone. Although 43% of people worldwide own a smartphone on average, improper smartphone use can have disastrous consequences for all users (Elhai, Dvorak, Levine & Hall, 2017). People's daily lives now heavily rely on the usage of mobile phones along with other information and communication technology (Elhai et al, 2017). In regards of the evolution of technological advances in information and communication, the mobile phone is the sole medium of communication gadget that has garnered this much attention and maintained such a strong hold on people. Over the past 20 years, phones have grown into our closest companions, almost omnipresent as means of communication. One technological advancement that has profoundly altered human conduct and become ingrained in contemporary culture is the creation of the cell phone. No matter the circumstance, a simple mobile phone beep or flash has the power to alter someone's attitude and demand attention.

In accordance with data released by the Nigerian Communications Commission [NCC] in March 2021, there are around 195.7 million active smartphone users in Nigeria, of which 187 million utilise different GSM networks to access the internet via their phones (Isenyo, 2022). The average consumer uses their smartphone for three hours a day, more than they do for watching TV or using other media. Numerous youths claim to never turn off their phones, sleep with them next to them, and constantly check them obsessively throughout the course of the day (Huffington, 2018). This has been described as "always on," and it has become the standard for a lot of young people (Kuss & Griffiths, 2011).

That being said, there is no denying that smartphones are the best at simplifying and managing life, which is more of a blessing than a problem. One cannot completely rule out the possibility that a smartphone may be addictive because of its capacity to regulate several aspects of a person's life.

In Hashemi, Ghazanfari, Ebrahizadeh, Ghavi, and Badrizadeh's (2022) descriptive-systematic and cross-sectional study, 212 participants were objectively selected from Lorestan University of Medical Sciences using objectively sampling to examine the relationship between the cell phone overuse scale and depression, anxiety, and stress among university students. The Cell-phone Overuse Scale (COS) and the Depression, Anxiety, and Stress (DASS-21) were the two standard questionnaires used to collect the data. The outcome showed that there was a robust correlation between the cell phone over-use score and the stress-related score, as well as between the cell phone excessive-use index and the anxiety and the depression index. Damiyal, Javaid, Hassan, and Khan (2022) used Pearson's correlation and the x2-test to look at the relationship between physical and mental health variables and the demographic variables in their study. The Relationship between Mobile Usage on the
Physical and Mental Health of University Learners: A Cross-Sectional Study. The likelihood that excessive mobile phone use will have a detrimental effect on personality was also predicted using the binary logistic regression model. The average age of the 400 participants, according to the results, was 24.45 ± 3.45 years. High cell phone users had higher average eye strain than Low cell phone users, and this difference was statistically significant.

The phrase "computer-induced health problems" can be used to describe a variety of issues that prolonged and improper computer use might cause in computer users. When utilising a computer in an inefficient way for an extended length of time, a user may encounter several physical health issues. When utilising peripherals, the computer user could exhibit poor manners, such as adopting a faulty posture. Psychology Today (2012) reported that there have been adverse effects on mental health, including well-being, mental abilities behaviour, and even hallucinations, from excessive usage of electronic screens. Thomée, Härenstam, and Hagberg (2012) looked at the ergonomics and musculoskeletal symptoms in connection to computer usage and various input mechanisms, but they also took into account the impact on mental health. More than 20 years ago, the phrase "techno-stress" was coined to characterise emotional responses related to computer use. According to certain theories, using a computer might cause psychophysiological stress reactions as a result of occupational pressure. These reactions may subsequently become habituated to the tech workplace environment, resulting in computer-related symptoms. The phrase "ICT stress" has been used to characterise stress brought on by time constraints, job interruptions, and technical issues related to using information and communication technologies (Thomée et al. 2012). In a survey of four hundred and fifty seven individuals with severe psychological disorder, it was shown that most of them (89%), have access to the world wide web through computer gadgets (54%) and tablet devices (32%), which allows for socialisation, networking, and the ability to gather knowledge (Gay, Torous, Joseph, Pandya & Duckworth, 2016).

Overuse of the internet and computers can lead to a number of health issues. Increased computer use can have an effect on aspects of mental and physical health. Poor posture, musculoskeletal discomfort, obesity, deteriorating vision, and mental disease are associated with it (Habibzadeh, 2018). The potential health risks associated with computer use are quite concerning. Increased computer use can have negative effects on the brain, general structural behaviours, and psychological issues. Overuse of computers can result in significant radiation exposure, which poses a risk to one's health. Hormone balances, the nervous system, the immunological system, DNA, the productive system, and other systems can all be adversely affected. Other health issues associated with extensive computer use include an increase in cancer and heart disease (Mihajlov & Vejmelka, 2017).

Overuse of the internet increases sedentary time and inactivity, which affects body weight and body mass index (BMI), which can lead to disorders such as obesity and overweight in some people (Vandelanotte, Sugiyama, Gardiner & Owen, 2019). Short-term use of smartphones and computers can help reduce anxiety symptoms, but prolonged use increases the risk of both anxiety and depressive symptoms (Noel, Acquilano, Carpenter-Song, & Drake, 2019; Yi, Junling, Hao, Yimeng, Suhong, Junming & Hua, 2020). Chen, Chen, Pakpour, Griffiths, and Lin (2020) found a favourable association between teenage electronic entertainment and anxiety and depression. This could be a serious problem that requires proactive measures to stop the bleeding and prevent more harm.

There are nearly 5 billion active internet users worldwide, or approximately sixty % of the total population, according to latest data (Statista, 2020a). Using social media has become a vital part of many people's lives worldwide. Globally, 2.95 billion individuals were active users of social media in 2016. Additionally, it was predicted to rise to about 3.43 billion by 2023 (Statistica, 2020b). Technology and communications have advanced across a wide range of industries, speeding up work, reducing travel time, and being seen as opportunities, but they can also pose a risk
to users' health and well-being (Hashemi et al., 2022).

Overuse of ICT tools has been linked to decreased wellbeing, increased drug use, and depressed symptoms (Ha & Hwang, 2014). Samaha & Hawi (2016) shown that while there is a correlation between ICT tool addiction and life happiness, it is through perceived tension and academic achievement. Although ICT technologies are incredibly useful in many spheres of research, business, training, culture, and legislation, excessive and improper usage of mobile phones can lead to addiction and other neurological disorders. People build deeper connections in the virtual world than in the actual one, and excessive usage of this gadget can lead to negative effects on academic performance, conditioned behaviour, and dismissal from college (Hashemi et al., 2022).

The world's growing reliance on modern communication technologies has raised some worries about the potential negative health effects of continuous consumption of radiofrequency radiation from cellular devices and their base stations. The usage of ICT tools has grown significantly in recent years, but the long-term health impacts of using these communication tools have not received enough attention. For this reason, this study aims to determine if using ICT tools has no discernible impact on tertiary students' health.

Statement of the Problem

Young users' use of phones, computers, and the internet is so deeply ingrained in their habit that it is easy to spot signs of behavioural addiction, including their stopping their regular activities. It's important to note that there may be controversial and negative effects of users' excessive use, including interpersonal damage, financial hardship, mental stress, and declining literacy. The symptoms of addiction include loneliness, boredom, anxiety, despair, tension, and a lack of life satisfaction. Dysphonic moods, also known as mood swings, are characterised by a loss of enjoyment or interest in one's regular activities as well as a lack of motivation. Due to the lack of face-to-face inhibitions, addicts with poor self-esteem may discover that they desire to contact with people without risking bodily or emotional harm. Those people are attempting to flee the harsh facts of life.

While the use of ICT tools has increased across all age and economic groups, students in postsecondary institutions are seen to be one of the most significant target customers and the largest user base for ICT services. Overuse can impair students' focus in class, which has an impact on their academic performance and accomplishment and can lead to addiction. In addition, it may lead to a life of feelings of isolation a diversion from academic work, simple access to exam fraud, and other illegal activities like pornographic video and online fraud.

There is a lack of research on the impact of excessive phone usage on students' health in Edo State's higher institutions, despite the possibility that excessive consumption of ICT tools may have negative effects on several aspects of an individual's health. For this reason, this study was conducted.

Research Questions

The following research questions were raised to guide the study:

1. Does the usage of phone influence the health of students in tertiary institutions in Edo State?
2. Does the usage of computer influence the health of students in tertiary institutions in Edo State?
3. Does the usage of internet influence the health of students in tertiary institutions in Edo State?

Hypotheses

1. There is no significant influence of phone usage on health among students of tertiary education institutions in Edo State.
2. There is no significant influence of computer usage on health among students of tertiary education institutions in Edo State.
3. There is no significant influence of internet usage on health among students of tertiary education institutions in Edo State.
Methodology

Using a descriptive survey approach, this investigation determined whether the utilization of computers, phones and the internet has any impact on the state of higher education institutions in Edo State. To direct this investigation, three research questions and hypotheses were posed. 2,750 students from 300 levels in the home economics, faculty of education, and diploma 2 computer studies departments at the polytechnic make up the study's population. For this study, 900 respondents were chosen at random from a population of 2,750 respondents in three higher education institutions (Ambrose Alli University, University of Benin, and Federal Polytechnic, Auchi, Edo State). This was divided equally among the 300 responders from each of the three institutions that made up the research region. There are 412 males and 488 females in this population. The researcher has adapted Rahman's (2011) Digital Technology and Healthcare Questionnaire (DTHQ) as the data gathering tool. To better fit the needs of this study, the tool's initial 30 components were trimmed down to 25. Three test specialists from the departments of computer science, home economics, and measurement and evaluation validated the instrument. The instrument's reliability was assessed using the Cronbach Alpha statistics, and an alpha reliability index of 0.91 was found. To test the hypotheses at 0.05 alpha level, the Analysis of Variance (ANOVA) was employed.

Presentation of Results

Hypothesis 1: There is no significant influence of phone usage on health among students of tertiary education institutions in Edo State.

Table 1: Analysis of Variance (ANOVA) of Significant Influence of Phone Usage On Health Among Students of Tertiary Education Institutions in Edo State

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1590</td>
<td>2</td>
<td>.795</td>
<td>5.014</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5541.133</td>
<td>96</td>
<td>57.720</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5542.723</td>
<td>98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \alpha = 0.05; p < \alpha \) Significant

Table 1 shows the ANOVA statistics result of the noteworthy variation among the pretest average scores of the clustered group. From the table, it shows an F-value (5.014) and a p-value (0.001). The probability value is higher than the threshold of 5 percent at which the hypothesis test was conducted (p<0.05). This reveals a significant influence. Therefore, the null hypothesis which states that “there is no significant influence of phone usage on health among students of tertiary education institutions in Edo State” is rejected. This implies that phone usage has influence on health status among students of tertiary education institutions in Edo State.

Hypothesis 2: There is no significant influence of computer usage on health among students of tertiary education institutions in Edo State.

Table 2: Analysis of Variance (ANOVA) of Significant Influence of Computer Usage on Health among Students of Tertiary Education Institutions in Edo State

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>962.026</td>
<td>2</td>
<td>962.026</td>
<td>55.039</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20939.641</td>
<td>96</td>
<td>17.479</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21901.667</td>
<td>98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \alpha=0.05, p < \alpha \) Significant

Table 2 shows the ANOVA statistics result of the noteworthy variation among the pretest average scores of the clustered group. From the table, it shows an F-value (55.039) and a p-value (0.001). The probability value is higher than the threshold of 5 percent at which the hypothesis test was conducted (p<0.05). This reveals a significant influence.
conducted (p<0.05). This revealed that there is a significant influence of computer usage on health among students of tertiary education institutions in Edo State.

**Hypothesis 3:** There is no significant influence of internet usage on health among students of tertiary education institutions in Edo State.

| Table 3: Analysis of Variance (ANOVA) of Significant Influence of Internet Usage on Health Among Students of Tertiary Education Institutions in Edo State |

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>270,885</td>
<td>1</td>
<td>270.885</td>
<td>15.003</td>
</tr>
<tr>
<td>Within Groups</td>
<td>216,307.82</td>
<td>1198</td>
<td>18.056</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>219,016.67</td>
<td>1199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \alpha=0.05, p<\alpha \) Significant

Table 3 shows the ANOVA statistics result of the noteworthy variation among the pretest average scores of the clustered group. From the table, it shows an \( F \)-value (15.003) and a \( p \)-value (0.001). The probability value is higher than the threshold of 5 percent at which the hypothesis test was conducted (p<0.05). This revealed that there is a significant influence of internet usage on health among students of tertiary education institutions in Edo State.

**Discussion of Results**

From the analysis, the influence of phone usage on health among students of tertiary education institutions in Edo State was confirmed. This implies that phone usage has effect on health of students in post-secondary institutions of learning in Edo State. The reason being that it students uses their phones over a longtime without moderation. As long as there is no moderation in the usage the device, there is bound some negative consequences. This finding is in support of Dianiyal et al (2022) on the Relationship between Cellphone Usage on the Physical and Mental Wellbeing of University Students: A Cross-Sectional Study, and found that eye strain was more in extensive mobile phone users than in moderate phone users. It was further revealed that cell phone usage significantly correlated with a number of psychological, anxiety and behavioural disorder.

Testing hypothesis two, the result shows that there is significant influence of computer usage on health among students of tertiary education institutions in Edo State. This means that use of computer has significant on health among students of tertiary education institutions in Edo State. Although the use of computers has improve the effectiveness of carrying tasks, the overuse of the ICT tool have significant impact on the health of individuals. This finding is in agreement of Habibzadeh, (2018), who found that computer usage is accompanied with bad posture, musculoskeletal pains, obesity, weaker eyesight and mental illness. In addition, the result corroborated the work of Mihajlov and Vejmelka (2017) whose findings established that addictive and extensive computer usage was correlated with heart disease are other health problems.

Results for hypothesis three uncovered a noteworthy influence of internet usage on health among learners of post-secondary education institutions in Edo State. It also indicates that students’ health at Edo State’s postsecondary educational institutions is significantly impacted by internet use. The business sector, research, and technology for communication and information have all benefited greatly from the internet; nonetheless, prolonged usage of the internet has a negative impact on people's health. This bolsters the research of Vandelanotte et al. (2019), which discovered that excessive Internet use increases sedentary time and inactivity, both of which have an influence on body weight and body mass index (BMI), which in turn can lead to overweight and obese problems in some individuals. Furthermore, excessive internet usage may worsen mental health by increasing drug abuse and depressed symptoms (Ha & Hwang, 2014).
Conclusion

Over-use of ICT tools has serious implication to the health of individuals, as well as tertiary institution students who are mostly heavy users. It was found that the use of ICT tools have impact the health of tertiary institution students negatively.

Recommendations

From the above findings, it is recommended that:

1. Students in tertiary education institution should moderate the use of ICT tools in their studies, researches and other activities.
2. Tertiary education institutions should put up measures to help regulate students usage of ICT tools to manage the health implications of these devices.
3. Home managers and Medical practitioners should carry out sensitization workshops and seminars to create awareness of the health implication of the use of ICT tools on individuals.

References


