



An Investigation on The Impact of Smartphone Addiction on Academic Performance of Secondary School Students in Lilongwe City

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ABSTRACT

The major focus of this paper was to investigate the impact of smartphone addiction on academic performance of secondary school students in Lilongwe City. Into today's world, digital technology changes so rapidly and integrates into our society at such an accelerated rate, it is hard to keep up with it, let alone reflect on the effects it has on our lives. Smartphones are the new generation of mobile phones; they have emerged over the last few years and already have conquered the market. Smartphones with their mini keyboards are not just phones, but have computer functions as email, calendar and address book, and office programs for reading and editing. The study utilized a theory developed by Sandra Ball-Rokeach and Melvin DeFleur which explains how people (in this case secondary students) use and become dependent upon the media such as smartphones. The Dependency Theory says the more a person becomes dependent on the media to fulfill these needs, the media will become more important to that individual. It was found that there is a negative correlation between hours spent using smartphone and school performance. It was also found that smartphone prevalence for private schools (72%) is higher than the prevalence rate in public schools (56%) in Lilongwe city. The prominent causes of smartphone addiction among secondary students are social media (88%) Fear of missing out (78%), Peer pressure (88%), Gaming (66%), Boredom (43%), Lack of self-control (44%). Internet access (88%),8. Emotional dependence (66%), Lack of awareness (88%), Parental influence (33.3%). The recommendations are as follows; education and awareness campaigns, establishing healthy digital habits, parental involvement and guidance, peer support and community engagement, promoting engagement in offline activities, sports, hobbies, and community groups can reduce reliance on smartphones, digital well-being features, emphasizing mindfulness and mental well-being, providing alternative coping mechanisms, school policies and interventions.

Keywords: Smartphone Addiction, Secondary School, Academic Performance

1. Introduction

Across OECD countries, in recent years, the question of whether or not smartphone use (i.e. the time that an individual is active on her/his smartphone per day or per week) affects performance and quality of life has occupied an important place in social. This debate is fueled by a multidisciplinary scientific literature that not only relates smartphone use to reduced performance during driving, walking, and working, but also to poorer study results. Scholars' interest in the connection between smartphone use and the latter outcome (poorer study results) is not surprising. Smartphone use in the OECD region has increased massively during the past decade.

Due to the prevalence of smartphones in our society, excessive use and even addiction have become significant global issues. Although numerous studies have examined the relationships between mobile phone use and educational outcomes, many such studies have yielded mixed findings. Most of these studies have explored the effects of problematic smartphone use by university students. Hence, this study focuses on academic performance of secondary school students. Thus, one of the goals of this meta-analysis is to examine whether smartphone use in the classroom affects secondary students' learning.

Jimat Internet Addiction Study shows tremendous growth of about 84% on smartphone usage from 2014 to 2021 among youths in academic institutions in Lilongwe. Internet usage has changed the dynamics of our lives to a great extent. It touches all the aspect of our lives including the way we interact socially, the way we do banking, the way we book a cab, travelling, social media, e-commerce. These changes have been catalyzed by easy access of internet from our smartphones and evolving technologies like 4G providing high speed internet connectivity.

2. Problem Statement

Across developing countries, in recent years, the question of whether smartphone use affects performance and quality of life has occupied an important place in social debate with others suggesting that it affects youth positively whilst others say it affects them negatively. Although there is some evidence regarding students' use of smartphones in education, there is little research on how they have used smartphones to support learning activities and how this relates to academic performance. The awareness of possible negative consequences of smartphone usage certainly reduces the overuse of smartphone. Few studies have been articulated the impact of smartphone addiction on secondary students' academic performance in Malawi.

In Malawi very, few research have been done related to the impact of smartphone addiction on academic performance of secondary school students. Even though the few studies done were useful in indicating usage patterns, they are relatively general and do not focus on understanding the unique, in-depth, rich and individualistic lived experiences of study participants. This is why the researcher opts to undertake this study problem.

3. Literature Review

Smart Phone Addiction

The definition of smartphone addiction has been the subject of intense debate among professionals due to the surge in the usage of phones. Researchers have attempted to study this same issue under various terminologies, like "mobile phone addiction", "mobile phone dependence", excessive smartphone use". Covering all the terminologies used in the existing literature, smartphone addiction alludes to excessive usage of smartphones in uncontrollable situations, affecting basic activities of daily living and leading to negative consequences.

Due to the proliferation of phone use, researchers have attempted to operationalize smartphone addiction in terms of smartphone overuse (Lee, 2017), excessive smartphone use (Chen, Liang, Mai, Zhong, & Qu, 2016), compulsive mobile phone usage (Kim & Byrne, 2011), mobile phone addiction (Eduardo et al., 2012), heavy smartphone use (Lee, 2014), problematic mobile phone usage (Billieux, Van der Linden, 2018), and mobile phone dependence (Wang, Wang, Li, Dong & Chi, 2013). Thus, the conceptualization of smartphone addiction has generated intense debates among researchers.

Given this, many scholars have attempted to define smartphone addiction in the context of behavioral addiction. Sussman and Sussman (2011) explored the definition of addiction under five elements: (a) engagement in the behavior to achieve appetitive effects, (b) preoccupation, (c) temporary satiation, (d) loss of control, and (e) negative consequences. They justified this definition by stating that anyone can experience each element in part(s), combined with one or more of others or a case where an individual possesses the five characteristics of addiction.

Shambare, Rugimbana, and Zhoua (2012) examined six types of behavior: habitual, mandatory, voluntary, dependent, compulsive, and addictive. However, their study found support for only three: dependency, habitual, and addictive behavior. The findings explain a condition where smartphone use has fulfilled a deep need (dependency, habitual, and addictive behavior) to the extent that the individual has difficulty conducting basic activities of daily life without the concurrent use of a smartphone. For example, some people find it difficult to sleep through the night without checking social media sites multiple times.

Similarly, Griffiths (2005) operationally defined behavioral addictions as any behavior that consists of the six core components of addiction – salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. Griffiths stated that any behavior that fulfills any of these six criteria is categorized as an addiction. Also, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) listed eleven criteria for Substance-Related and Addictive Disorders, including withdrawal, tolerance, hazardous use, repeated attempts to control or quit, physical or psychological problems related to use, given up activities, and craving (American Psychiatric Association (APA), 2013). As stated in the DSM- 5 criteria, an individual must meet two or more of these criteria within 12 months to be diagnosed with a substance use disorder.

Impact of Smartphone on Social Interaction

Communication plays a vital part of human life. This indicates technology changing rapidly to match human necessities. In the modern society, communication becomes easier with the development of technology, and it influences the style of communication between individuals. The unique and multiple application features of smartphones make it different from other phones. However, social engagement between individuals is jeopardized with its unique application by limiting their face-to-face interaction and develop more chat rooms communication. It might cause lack of real-life social interaction that contribute to relationship issues to arise, and interference in students' academic work (Kuss & Griffiths, 2011).

Society is moving towards smartphone world, therefore obviously it can be seen that individuals are investing most of their time on the screen chatting and engaging in social media than meeting face to face with their friends and families. Although the application of smartphones increases the ability to interact with social mates easily and freely, but it poses danger on relationship between human. Even though individuals are able to create groups of friends and communicate through various social platforms, but oral communication is seen to be lack.

We talk, tweet, and text to avoid quiet confrontations with our own unexplored thoughts (see Case, 2011). Impatience. Today's college students increasingly desire and even demand the instant and the immediate. Once a virtue, patience is becoming as rare as handwritten letters. Google found that slowing search results by just 0.4 seconds would reduce the number of searches by eight million per day. One in four people abandon a web page that takes more than four seconds to load. Half of mobile users abandon a page if it does not load in 10 seconds (Dunlop, 2012). Alvaro Retana, a distinguished technologist with Hewlett-Packard, stated: "The short attention spans resulting from the quick interactions will be detrimental to focusing on the harder problems" (quoted in Anderson & Rainie, 2012).

Analysts expect that constantly connected students will thirst for instant gratification and will often make quick, shallow choices (Anderson & Rainie, 2012). It is not possible or even desirable to discuss major problems without lengthy, often messy conversations about those problems. A generation that routinely spends 140 or fewer characters on a topic may not be adequately prepared to tackle these problems. Deep thinking, contemplation, and reflection are getting short shrift in this instant access culture. Sifting skills, synthesis, and big-picture holistic thinking are needed.

Empirical Review

Past research studies emphasize that these smart devices can save time, provide access to a wide range of specialized Apps, internet, email, free calling, chat, Wi-Fi, and social networking sites. Smartphones have become a significant part of adolescents' life that they feel incomplete without them. Thus, the literature evidenced that smartphone technology has, to a large extent, revolutionized the lifestyle of adolescents in all their developmental affairs and has paved the way for multiple functions to enjoy their lives.

Roberts, Yaya, and Manolis (2014) found that cell phone addiction can negatively influence academic performance as students' attention in class is disrupted because of cell phone use, and such disruption affects their studies outside of class. Excessive mobile phone use has been associated with distraction in the classroom (Bugeja, 2007; Campbell, 2006; Dietz & Henrich, 2014; Froese et al., 2012; Harman & Seto, 2011; Wei & Wang, 2010). These studies reveal that in-class texting produces significant negative effects on students' academic performance.

Many studies have discussed smartphone addiction in terms of students' multitasking in the classroom and the effects of this multitasking on students' academic performance (Ellis, Daniels, & Jauregui, 2011; Jacobsen & Forste, 2011; Junco & Cotton, 2011). Findings on the consequences of multitasking with the smartphone on academic performance showed a negative relationship between students' problematic mobile phone use and academic performance. Junco and Cotton (2011, 2012) investigated the relationship between multitasking on phones and student academic performance among college students to account for the effects of multitasking on academic performance. This study showed that sending text messages and checking social media websites like Facebook while performing an academic task or doing homework interfered with completing their schoolwork and negatively impacted the participants' overall GPA.

However, few studies have found any effects of smartphone addiction on students' academic performance (Dos, 2014; Lau, 2017). The positive effects of smartphone addiction on students' academic performance may be associated with the shift in social practices that normalize excessive smartphone use. In addition, Tessier (2013) found that smartphone use as an education tool could enhance learning. When students are allowed to use their cell phones as a learning aid in class, it could increase academic performance and benefit educational settings.

In summary, smartphone addiction has generated mixed findings among researchers. Hence, the primary goal of this meta-analysis is to reconcile the inconsistencies in the literature regarding the size and direction of the effects of smartphone addiction on students' academic performance.

4. Scope of the study

As part of the Master of Social Work program at St Eugene University in the area of project implementation monitoring and evaluation, this study is primarily for academic purposes. The scope of this study is to assess the impact of smartphone addiction on academic performance of secondary school students. The Malawi Growth and Development Strategy III (Ministry of Finance Economic Planning and Development 2017) specifies that, in order to improve the quality of higher education in Malawi, there is a need to improve usage of and access to Information and Communications Technologies (ICTs). Due to their increasing capabilities, such as computing power, increased storage capacity, Wi-Fi connectivity and upload capabilities, smartphones are popular ICT tools used in higher education institutions. Students in institutions of higher learning are leading in the usage of mobile devices (Al-Emran, Elsherif & Shaalan 2016) using them while travelling, at home or at school. Previous studies on smartphone usage patterns among university students have resulted in two main schools of thought: firstly, that they are used for academic purposes and, secondly, that they are used for socialization and communication. On one hand, students use smartphones for accessing and downloading academic resources from the internet in order to complete their coursework or assignments. Basically, the core of this research is to check if smartphone addiction is impacting more negatively or positively on the academic performance on secondary school students. The study will focus on Secondary School Students in Lilongwe City in Malawi.

5. Objectives of the Study

5.1 Main Objectives

To investigate the impact of smartphone addiction on academic performance of secondary school students.

5.2 Specific Objectives

- i. To know the prevalence of smartphone addiction among secondary school students
- ii. To figure out the causes of mobile phone addiction among secondary school students
- iii. To investigate the relationship between smartphone addiction and academic performance

5.3 Research Questions

- i. What is the prevalence of smartphone addiction among secondary school students?
- ii. What causes smartphone addiction among secondary schools?

- iii. How does smartphone addiction affect academic performance of secondary school students?

5.4 Hypothesis

H1 (Alternative Hypothesis)

There is a significant difference that exists between gender and smartphone addiction among secondary school students (1. Male 2. Female)

There is a significant difference that exists between type of school and smartphone addiction among secondary school students (1. Private 2. Public)

Ho (Null Hypothesis)

There is no difference that exists between gender and smartphone addiction among secondary school students.

There is no difference that exists between type of school and smartphone addiction among secondary school students.

6. Methodology

6.1 Research Approach and Design

This study employed a mixed methods design. Meaning the study used both qualitative and quantitative methods of research. In research design, the essence is to structure the investigation in such a way as to identify the variables and to collect the data. A well-articulated design is desirable for the objective of data collection that assisted to address the research questions. The research design therefore serves as a veritable guide for data generation, especially primary data.

6.2 Study Population

A mathematician defines a population as the universal set and a sample as a sub-set. It should be noted that from a research point of view, the term population is not only applicable to human being but also to any case of interest in a study. population therefore is the totality of objects under investigation. Specific respondents were involved into the study.

The study population were the 380 secondary students, 10 teachers from 2 selected schools in Area 25, Lilongwe district (Kabwabwa Secondary and Hilltop Secondary School). The researcher deliberately chose one public school and one private school. This population was chosen because it was assumed to have adequate knowledge of the subject under investigation and the research variables under investigation.

6.3 Sample and Sampling Technique

In this research, random sampling was employed in selecting respondents for the questionnaire. This technique enabled each unit within the study population to be given a chance to be selected to be part of this study. Purposive sampling was used to select respondents for the interviews. The sample size of this study was 90, calculated using Yamanes Formula 5% margin of error. A sample size is the group of people who you select to be in your study. Quantitative data from the questionnaire was analyzed using Statistical Package for Social Sciences (SPSS). The qualitative data from the interviews in this research was analyzed using thematic analysis.

7. Research Findings, Analysis and Discussion

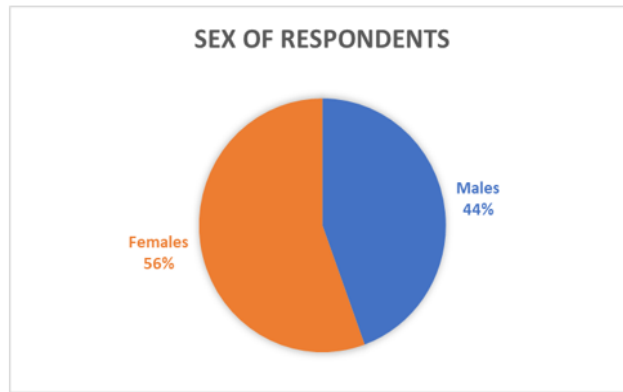
Findings from Questionnaires and Interviews

The finding and analysis of the data was obtained from the research instruments of this study. The findings from this study are discussed according to the sections of the research tools. This data was extracted and analyzed according to the objective of the study.

Demographic Information

Sex of the Respondents

44% of the respondents were Male, 56% were female.



Age of the respondents

Based on the table below, the average age of the respondents from the questionnaire was 16 years

Table 4.1 Age of respondents from questionnaire

	N	Minimum	Maximum	Mean
Age (years)	90	12	19	16

Respondents' education level

Most of the study respondents' education level was form 3 and form 4, which is 56%.

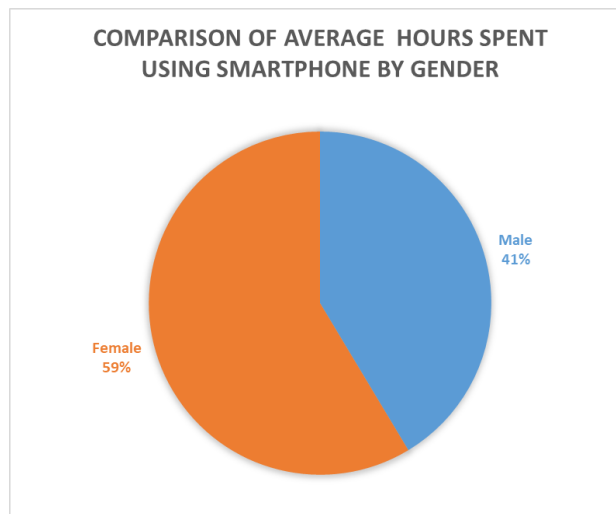
		EDUCATION LEVEL				Total
		FORM ONE	FORM TWO	FORM THREE	FORM THREE	
Gender of Respondent	MALE	10	10	10	10	40
	FEMALE	10	10	15	15	50
Total		20	20	25	25	90

HOURS SPENT USING SMARTPHONE

More females than males indicated they feel safer when they have their phone with them (93% versus 81%), they would panic if they lost their phone (88% versus 70%), they always need their phone (71% versus 60%).

Hours spent using Smartphone Disaggregated by Gender & Type of School

Type of School	Gender	average hours spent using smartphone
Private	Male	7
	Female	9.5
Public	Male	5.5
	Female	7.8

**PREVALENCE OF SMARTPHONE ADDICTION AMONG SECONDARY SCHOOL STUDENTS****Prevalence of Smartphone addiction**

In Private Schools	In Public Schools
72%	56%
spend Average 8hrs using smartphone	spend Average 5hrs using smartphone

Most Used Smartphone Apps

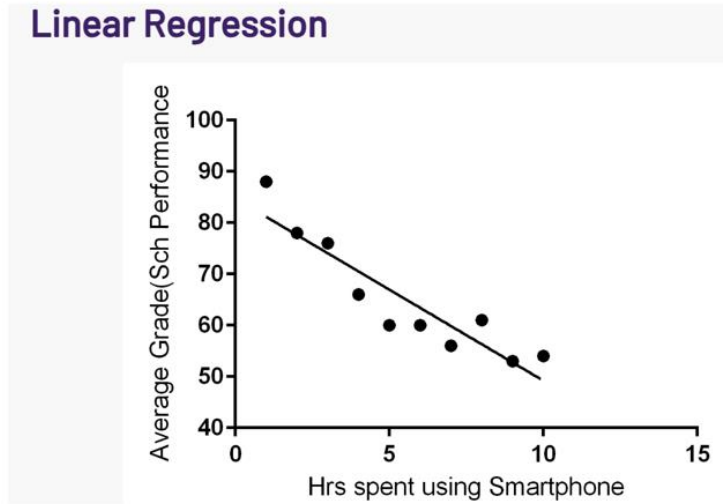
Mobile App Usage	Percentage
Facebook	66.60%
Whatsapp	95%
Tiktok	70%
Youtube	30%
Others	15%

As shown in the table above, most secondary students are using WhatsApp (95%) and TikTok (70%) on their smartphones.

THE RELATIONSHIP BETWEEN SMARTPHONE ADDICTION AND ACADEMIC PERFORMANCE

Regression Analysis Disaggregated by Type of School

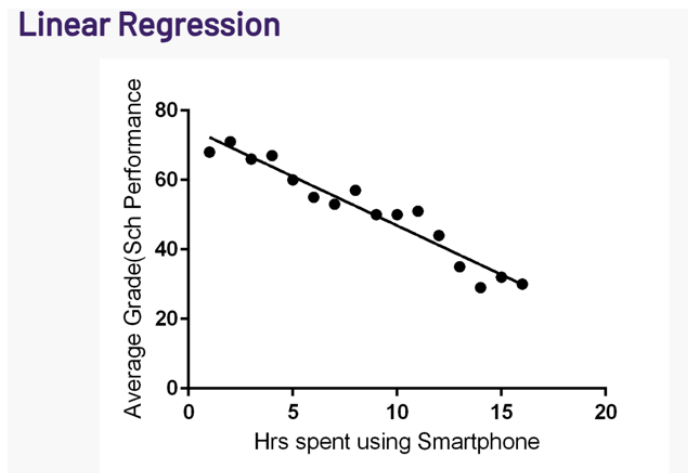
Public Secondary School



P value = 0.0002

It was found for public secondary students, there is a negative correlation between hours spent using smartphone and school performance)

Private Secondary School

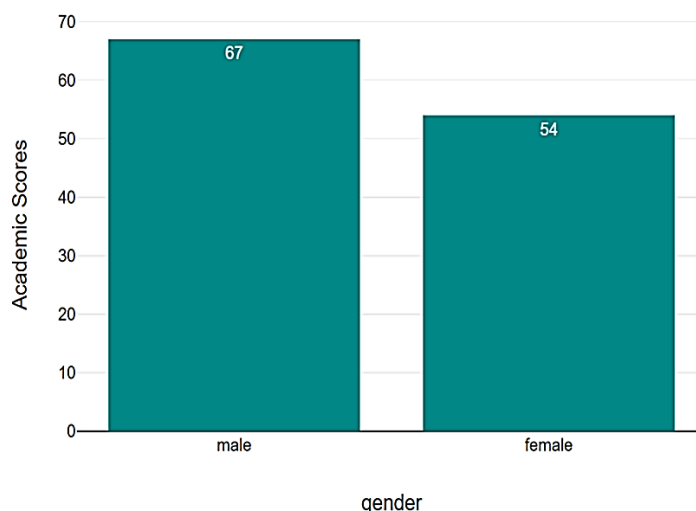


P value = < 0.0001

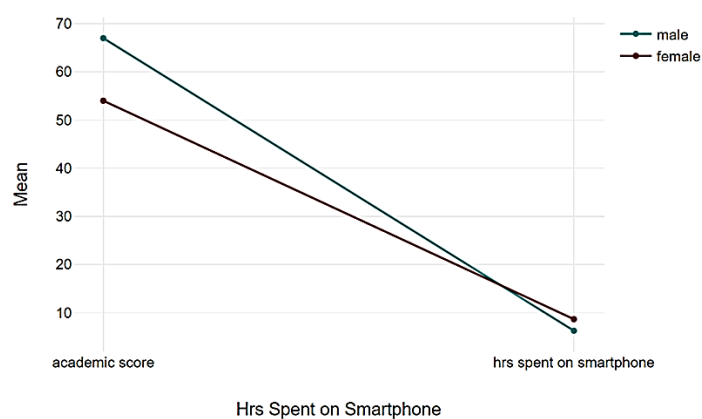
It was also found that for private secondary students, there is a negative correlation between hours spent using smartphone and school performance).

"If I am doing my homework like assignment or discussing timed essay questions and at the same time WhatsApp notifications comes, I must forget everything I was doing and start interacting with the person or group who sent me the message" Quote.

Academic Scores



Combo Graph



NB: This means that there is a significant difference that exists between gender and smartphone addiction among secondary school students.

CAUSES OF MOBILE PHONE ADDICTION AMONG THE YOUTH

1. social media (88%): Interview quote “The advent of social media platforms like Facebook, Instagram, and Snapchat has had a significant impact on youth. These platforms constantly provide instant gratification and the need to stay connected with friends and peers, leading to addiction”.
2. Fear of missing out (78%): Youth often feel the need to consistently be up to date with the latest information, news, and trends. This fear of missing out pushes them to constantly check their smartphones to ensure they are not left out.
3. Peer pressure (88%): Youth may feel pressured to be constantly available and responsive to their peers through messaging apps and social media. This can lead to an addiction as they strive to maintain social connections and avoid feeling left out.
4. Gaming (66%): Interview quote “The availability of a wide range of mobile games contributes to smartphone addiction. Youth can easily get hooked on addictive games that provide rewards, levels, and challenges, making it difficult for them to detach from their smartphones”.
5. Boredom (43%): Smartphones provide continuous entertainment and distraction, making them an easy escape from boredom. Youth may develop addiction habits to avoid feeling unoccupied or lonely.
6. Lack of self-control (44%): Youth may have difficulties managing and controlling their smartphone usage, leading to excessive use and addiction. This lack of self-control can be influenced by various factors, such as impulsiveness and low frustration tolerance.
7. Internet access (88%): Interview quote “Easy and constant access to the internet through smartphones creates a fertile ground for addiction. Youth can easily get hooked on various online activities, such as binge-watching videos or engaging in online shopping”.
8. Emotional dependence (66%): Smartphones provide a sense of emotional connection and security for many youths. They may rely on their smartphones to cope with negative emotions, anxiety, or stress, leading to addiction as a coping mechanism.

9. Lack of awareness (88%): Many youths may not be fully aware of the potential negative consequences of excessive smartphone usage. They may not realize the impact it can have on their academic performance, social relationships, and overall well-being, leading to continued addiction.

10. Parental influence (33.3%): Parental behavior and smartphone usage patterns can influence youth addiction. If parents excessively use smartphones, youth are more likely to see it as a normal and acceptable behavior, leading to their own addiction.

Recommendations

1. Education and awareness: Raising awareness about the potential risks and consequences of excessive smartphone use is vital. Parents, teachers, and the media can play a significant role in educating youth about the adverse effects of smartphone addiction, such as social isolation, sleep disturbances, and decreased productivity.

2. Establishing healthy digital habits: Encouraging youth to cultivate healthy relationships with their smartphones is crucial. This can include setting specific time limits for phone usage, designating 'digital-free' zones or periods, and promoting other forms of entertainment and social interaction that do not involve smartphones.

3. Parental involvement and guidance: Parents should actively monitor and participate in their children's smartphone usage. This can be achieved by establishing open communication about guidelines and rules, providing parental controls or monitoring apps, and setting a good example by managing their own smartphone use responsibly.

4. Peer support and community engagement: Promoting engagement in offline activities, sports, hobbies, and community groups can reduce reliance on smartphones. Encouraging youth to interact face-to-face with friends and engage in activities that stimulate their minds and bodies fosters a healthier lifestyle.

5. Digital well-being features: Smartphone manufacturers and app developers have started introducing features that monitor and manage screen time. Parents and schools can ensure these features are utilized effectively, providing reminders, and limiting access to certain apps or features during specific periods.

6. Emphasizing mindfulness and mental well-being: Encouraging young people to practice mindfulness and self-reflection can help them develop a healthier relationship with their smartphones. Promoting activities such as meditation, journaling, or engaging in hobbies that require focused attention can reduce the impulse to constantly check their devices.

7. Providing alternative coping mechanisms: Teaching youth alternative ways to cope with stress, boredom, and negative emotions can reduce their reliance on smartphones for distraction or emotional validation. Encouraging physical exercise, relaxation techniques, or creative outlets can help divert their attention and provide healthier coping mechanisms.

8. School policies and interventions: secondary schools can implement policies or integrate smartphone usage guidelines as part of their curriculum. This can include educating students on responsible smartphone use, setting limits on phone usage during school hours, and organizing awareness campaigns.

Conclusions

It can be concluded that there is a negative correlation between hours spent using smartphone and academic performance of secondary school students in Lilongwe. Prevalence rate of smartphone addiction for private schools 72% is higher than the prevalence rate in public schools 56% in Lilongwe city. The prominent causes are social media (88%) Fear of missing out (78%), Peer pressure (88%), Gaming (66%), Boredom (43%), Lack of self-control (44%). Internet access (88%),8. Emotional dependence (66%), Lack of awareness (88%), Parental influence (33.3%).

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