

**ENSIGN GLOBAL COLLEGE, KPONG
EASTERN REGION, GHANA**

**ASSESSING PARENTAL AWARENESS OF THE HEALTH IMPACTS OF EXCESSIVE
SMARTPHONE/TABLET USAGE IN CHILDREN IN THE
GREATER ACCRA REGION, GHANA**

By

**BUERKIE DARKOR
(227100219)**

**A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH,
FACULTY OF PUBLIC HEALTH, ENSIGN GLOBAL COLLEGE IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE
MASTER OF PUBLIC HEALTH DEGREE**

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DECLARATION

I hereby certify that except for references duly cited for other people's work, this project submitted to the Department of Community Health, Ensign Global College, Kpong is the result of my investigation under the supervision of Dr Stephen Manortey, and has not been presented for any other degree elsewhere.

Buerkie Darkor, (227100219)


.....

.....28/8/23.....

(Student's Name & ID)

Signature

Date

Certified by:

Dr Stephen Manortey

.....

.....

(Supervisor's Name)

Signature

Date

Certified by:

Dr Stephen Manortey

.....

.....

(Head of Academic Program)

Signature

Date

DEDICATION

This work is dedicated to my Father Dr. Francis Teye Darkor (deceased), my mother Rosina Darkor, my siblings, Dr. Buerkuor Darkor, Buermle Darkor, Mrs. Buernakie Banahene and Mrs Rejoice Mensah. I also dedicate it to Nicholas Duse and the children, Sedinam and Seli Duse.

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I dedicate this work to my Pastor Reverend Thomas Mensah-Yawson and his team for their prayers and encouragement. I also dedicate this work to all my friends.

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DEFINITION OF TERMS

Cyberbullying: is a form of bullying or harassment using electronic means.

Mesosystem: is a combination of two or more microsystems.

Exosystem: refers to one or more settings that do not involve the developing person as an active participant, but in which events occur that affect—or are affected by—what happens in the setting containing the developing person.

Bias: is a disproportionate weight in favor of or against an idea or thing, usually in a way that is closed-minded, prejudicial, or unfair

Obesity: Is a medical condition, sometimes considered a disease in which excess body fat has accumulated to such an extent that it negatively affects health.

ABBREVIATIONS / ACRONYMS

AOR	Adjusted Odds Ratio
CI	Confidence Intervals
EST	Ecological System Theory
HBM	Health Belief Model
JHS	Junior High School
KG	Kindergarten
SES	Socio-economic Status
SPSS	Statistical Product and Service Solutions

ABSTRACT

Introduction: Children can benefit from having gadgets because they can be creative through mobile games or creative applications that stimulate their senses and imagination. However, if children use gadgets without parental supervision, they run the risk of becoming dependent on them and developing an addiction. The purpose of this study is to show how children's use of technology affects their development and acceptance. Face-to-face interviews were used to select fifteen informants from children, caregivers, parents, and educators. **Methodology:** The study adopted a quantitative study that employs a cross-sectional survey approach to assess parental awareness of the health impacts of excessive smartphone/tablet usage in children within the Tema Municipality in the Greater Accra Region. The study site was Tema Municipality in the Greater Accra Region. Also, the population included parents whose children attend private and public schools within the metropolis. Also, parents whose children are less than 15 years old, whose children use smartphone-tablet. A sample size of 200 was selected using purposive sampling techniques. Data was collected through questionnaires, ensuring confidentiality. Data was stored securely, and analysis involved descriptive statistics using SPSS version 26. **Results:** According to the findings, the kids are okay with using gadgets because they are useful and easy to use. However, children's social lives, health, speech delay, and cognitive abilities were all negatively impacted by their use of technology, which could also have an impact on their education in the long run. **Conclusion:** The study provides comprehensive insights into children's gadget usage, parental awareness, and educational performance. It reveals that most children actively engage with smartphones and tablets, while a subset refrains from their use. Smartphones and tablets have emerged as dominant devices, highlighting a balanced preference for handheld and larger screens. **Keywords:** Smartphones, Children, Tema, Greater Accra Region, Ghana

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

According to the *Screen Time* guidelines by the Indian Academy of Pediatrics (Gupta et al., 2022), children below the age of 2 years should ideally not be exposed to the screen of any electronic device. For children between the ages of 2 and 5 years, it should not exceed one (1) hour; For older children and adolescents, it is essential to balance screen time for about two-three hours with other activities like physical activity, adequate sleep, time for schoolwork, meals, hobbies, and family time that are required for overall development (Khan *et al.*, 2022).

Modern families spend less time interacting face-to-face in outdoor settings and more time indoors with multiple electronic devices. 78% of children aged 3 to 18 years old owned mobile phones, 23% had personal tablets, and 93% had access to a laptop or computer. Children use mobile devices to access the internet either daily (60 per cent of the time) or weekly (93 per cent of the time), with 87 per cent using them at home and 63 per cent at school (Ryan & Lewis, 2017).

Current trends suggest that children are acquiring their first personal mobile devices at a younger age and that there is a growing reliance on mobile devices for staying connected. This raises the question of how the evolution of social relationships and the nature of peer interaction in the digital age are being altered by mobile devices (Livingstone, 2014). Although many parents are perplexed by the contradictory information that can be found in the media regarding the advantages and disadvantages of mobile devices, they are aware of the significance of utilizing mobile technology to function effectively in the twenty-first century (Chaudron *et al.*, 2015).

Parents compare their children's childhood experiences to the reality of their children growing up in the digital age, which is dominated by screens and devices. This creates a generational gap between parents and children (Brown, 2008). Claims that children's socialization processes in the

digital age are significantly different from those of their parents, even though the developmental progression into adulthood remains the same.

Children feel that their parents do not understand the reality of living in a digital age when parents limit their access to mobile devices (Booth, 2010). On the other hand, parents are concerned that their children are growing up with poor social skills, superficial relationships, and unhealthy obsessions or addictions to mobile devices, and multipurpose tools and have become an extension of their physical, psychological, and social selves (al-Khaddam & Al-Rawashdeh, 2013); (Buckingham, 2008). As a result, some users have reported that they cannot carry out their daily activities without their mobile devices (Holloway *et al.*, 2013). This study will assess parental awareness of the health impacts of excessive smartphone/tablet usage in children within the Tema Municipality in the Greater Accra Region of Ghana.

1.2 Problem Statement

The current generation is the first generation of children growing up with mobile devices (Radesky, *et al.*, 2015); hence, there is no known empirical longitudinal data that exist on the assessment of the long-term effects of mobile device usage on children's development (Radesky, *et al.*, 2015). It should be noted that easy access to mobile devices is enabling children to explore a lot of knowledge from videos and messages online rather than reading books nowadays. There is an imperative need for research to encompass the early and middle childhood stages to high school, especially at the age when smart device and internet use is rapidly increasing.

The excessive usage of smartphones, tablets, electronic games and other handheld screens has become a health concern as the number in the Tema Municipality now, as some children begin using these devices before beginning to talk are having issues with speech. Children in Ghana in

their early and middle childhood stages to high school, especially at the age of the smart device and Internet use, are rapidly increasing. However, this increase is causing them to be reluctant to learn and understand basic knowledge in school, which can affect their cognitive skills and increase their risk of a *CoComelon* speech delay.

CoComelon speech delay is a type of speech delay that affects the ability to produce clear speech sounds (VivaHealth, 2021). The excessive usage of gadgets is leading children to become anti-social and lack emotional management, so they tend to have tantrums in public or in their own homes (Suhana, 2017).

It was noted that mobile device research with young children has been scarce due to the challenge of collecting reliable first-hand data from children themselves; hence, data on mobile device habits and practices of young children have been collected through secondary accounts, such as a parental report, naturalistic observation, and thematic analysis of interviews with primary caregivers. In addition, parents play an important role in modelling, monitoring, and regulating mobile device usage to ensure it is done in an appropriately meaningful way.

The main limitation of extant research is that, although parents are becoming increasingly concerned with the extensive use of mobile devices by children, no researcher has looked into children's mobile device usage to examine its effect on the development of social competency.

In an era dominated by digital technology, the pervasive use of smartphones and tablets among children has become a subject of concern. The potential health impacts of excessive screen time in this demographic raise questions about parental awareness and understanding of the associated risks. This study seeks to assess parental awareness of the health impacts of excessive smartphone/tablet usage in children within the Tema Municipality in the Greater Accra Region, Ghana, aiming to identify gaps in knowledge that may hinder effective parental guidance.

1.3 Rationale of the Study

This study aimed to explore the awareness of the health impacts of the overuse of the smartphone or tablets among children and its detrimental effects on their health, and how to avoid these detrimental impacts in this generation. By analysing the various ways children use their mobile devices, it is easier to establish whether mobile device usage will ultimately support or hinder the development of social competency. The study on assessing parental awareness of the health impacts of excessive smartphone/tablet usage among children in the Greater Accra Region of Ghana holds several significant implications.

Also, it will help identify knowledge gaps among parents regarding the health effects of excessive screen time. This understanding is crucial for developing targeted interventions and educational programs to address these gaps and enhance parental knowledge. Moreover, the study will contribute to the development of evidence-based interventions and educational programs aimed at promoting responsible smartphone/tablet usage among children. By addressing specific areas of misconception or inadequate awareness, interventions can be tailored to meet the needs of parents in the region. Furthermore, increasing parental awareness will contribute to the protection of children's health and well-being. By understanding the risks associated with excessive screen time, parents can adopt measures to mitigate these risks and foster healthier habits for their children.

By providing evidence-based recommendations, the study can contribute to the formulation of policies that address the specific needs of the Greater Accra Region and promote a healthy digital environment for children. Ultimately, the study has the potential to enhance the overall well-being of children in the region and beyond. Promoting responsible smartphone and tablet usage can contribute to reduced screen time, improved sleep patterns, increased physical activity, and enhanced social interactions among children.

1.4 Conceptual Framework

From the Conceptual Framework below, the individual variables are mental development, physical development, parents' characteristics, and child characteristics. However, the dependent variable is parental awareness. The level of awareness and understanding among parents regarding the health impacts of excessive smartphone and tablet usage in children.

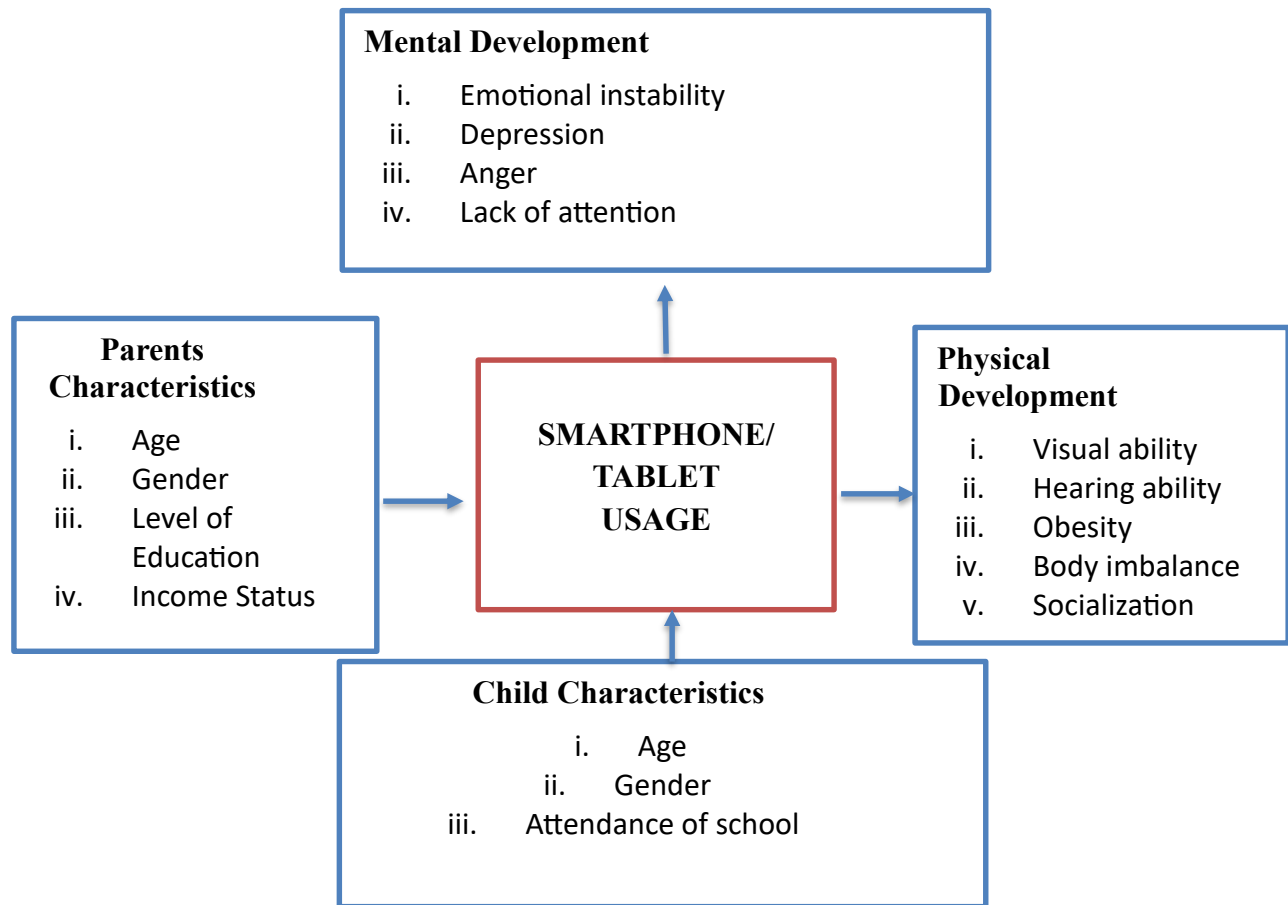


Figure 1: Author's construct (2023)

Source: Author's construct (2023)

1.5 Study Objectives

1.5.1 General Objective

The study aims to assess parental awareness of the health impacts of excessive smartphone/tablet usage in children within the Tema Municipality in the Greater Accra Region.

1.5.2 Specific Objectives

The study specifically sought to;

1. Examine Parents/Guardians' awareness of the excessive use of smartphones and tablets by their children
2. Explore what parents perceive as the benefits and negative effects of gadget use in their children.
3. Investigate the factors associated with the gadgets used by children.

1.6 Research Questions

1. What is the level of awareness or knowledge of parents of the excessive use of gadgets in their children?
2. What do parents perceive as gadget use's negative and positive effects on their children?
3. What are the factors associated with gadgets use in children?

1.7 Profile of Study Area

The Tema Metropolis is a coastal district situated about 30 kilometres East of Accra, the Capital City of Ghana. It shares boundaries on the North-East with the Kpone Katamanso and Ningo-Prampram Districts, South- West by Ledzokuku Krowor Municipal, North-West by Adentan Municipal and the Ga East Municipal, and the South by the Gulf of Guinea. The Ashaiman

Municipal is an in-lock enclave within the Tema Metropolis. The Metropolis covers an area of about 396 km² with Tema as its capital and lies within the coastal savannah zone (Tema Metropolitan Assembly, 2023).

The Greenwich Meridian (i.e., Longitude 0°) passes through the Metropolis, which meets the equator or latitude 0° in the Ghanaian waters of the Gulf of Guinea. The Metropolis' proximity to the sea with its low-lying terrain which projects into the sea makes it a natural endowment for a harbour. This evidently informed the decision the construction of the Tema Harbour in 1957, making the Metropolis “the Eastern Gateway of Ghana” (Tema Metropolitan Assembly, 2023).

According to the 2010 Population and Housing Census, the total population of the Tema Metropolitan Assembly was 292,773. This consists of 139,958 males representing 47.8% and 152,815 females representing 52.2%. The Metropolis has no rural settlements. The 2014 projected population of the Metropolis is pegged at 324,429 persons. The distribution of the population of the Tema Metropolitan area shows that the age group 25-29 recorded the highest population with 11.4 per cent whilst the 90-94 and 95-99 age groups had the least population which represents 0.1 per cent respectively. On average, there are more females than males in the metropolitan with a male-female ratio of 92:100. This means that for every 100 females in the Metropolitan area, there are approximately 92 males (Tema Metropolitan Assembly, 2023). However, Tema Metro is a place for several educational facilities. Ranging from Government and Private schools.

1.8 Scope of the Study

This research assesses parental knowledge of the health effects of excessive smartphone and tablet use among children in the Tema Metropolitan Assembly of the Greater Accra Region of Ghana. It seeks to assess the knowledge and comprehension of parents and guardians living in the defined

region about the possible detrimental consequences on children's physical and mental health, social development, and academic achievement. The study employed a quantitative research approach, including surveys, interviews, and a review of the relevant literature. The examination of acquired data entailed detecting patterns and themes. The research admits limitations including a small sample size and the possibility of bias. Ultimately, it intends to give insightful information on parental awareness in the context of the Tema Metropolitan Assembly.

1.9 Organization of the Study

There are six (6) chapters in this work. Chapter One serves as a broad introduction and examines the study's history, goals, and issue statement. Additionally, it briefly discusses the study's structure, limits, and research topics. The review of the literature is in Chapter Two. The study's research questions are utilized to guide the review of the literature. The study's conceptual framework is also described. The methodology is covered in Chapter Three, which also provides details on the population, sample, and sampling techniques utilized in the study. It also describes the research tools, methods of data collection, and data analysis strategy. Chapter Four focuses on the data analysis and presentation, while Chapter Five provides very detailed discussions of key findings compared to similar works in mainstream literature. The summary of the study's findings and recommendations is covered in Chapter Six.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter examines significant literature for the research to identify knowledge gaps and the parental awareness of the health impacts of excessive smartphone/ tablet usage in children. PubMed, Scopus, Google Scholar, Hinari, JSTOR, and Google search were used to conduct the literature search.

2.2 Parents' Awareness of Excessive Use of Smartphones

Parents' awareness of the risks of the excessive use of smartphones among their children and parents' attitudes toward this societal phenomenon are crucial factors to consider when examining the causes and effects of, as well as interventions to control, this public health issue. Kabali (2015) noted that a revolutionary change in society has been brought about by the recent emergence of smart devices that are Internet-based. He further explained that children's quick adoption of mobile devices is expected to have an effect on family relations as well as children's development, health, and literacy. In today's society, the negative effects of excessive smartphone use are plain to discern. According to Radesky (2015), children are increasingly choosing mobile devices as their favourite media source due to their large screens, portability, capacity to stream material, interactive features, and declining pricing. They added mobile devices that are used by kids to play games, view videos, chat, snap photos, and access software (apps).

A countrywide poll conducted by Common Sense Media found that in 2013, 72% of kids aged 0 to 8 years old used a mobile device, up from 38% in 2011. Even more striking was the rise in usage among toddlers: 38% in 2013, up from 10% in 2011 (Kabali, 2015). Kwon *et al.*, (2013) highlighted using a smartphone while driving can result in accidents, watching videos on a

smartphone while crossing the street puts pedestrians in danger of being hit by cars, and kids in elementary school are much more likely to become addicted to smartphone games. They added that kids struggle to focus in class and cell phone usage is getting more expensive. Moawad & Ebrahem, (2016) wrote that teenagers spend a lot of time on their phones, computers, and various video games, which may be one of the main reasons why new technology may lead to a decline in face-to-face relationships like the one between an adolescent and their parent. They further said that social media platforms have changed how teenagers interact and learn, and they provide new concerns for parents, researchers, and educators to consider.

According to a conclusive study on parental mediation, parents alter their mediation tactics per their beliefs about the diverse effects of media material on children (Nikken and Scholes, 2015). Parents of young children, in particular, are expected to take into account the importance of media for their children's development and adapt their parenting to these values because children today begin utilizing media at a young age (Australian Government, 2014). Per Lee (2013), the various chances and threats that kids and teenagers may run across online are documented by research on kids' internet use. He continued that Learning, communication, creativity, and expression are all possibilities and risks including being exposed to violent, hateful, or pornographic content, as well as invasions of privacy, cyber-bullying, and inappropriate interaction.

In his study, Genc (2014) found that parents that expressed a favourable opinion discussed advantages such as how children's motor and cognitive skills would develop, how they would become more tech-savvy, and how their visual memory would increase. Again, He also discovered that parents who hold negative views about smartphones have expressed concern that their children may become introverted, lead a lonely existence, or be exposed to dangerous radiation as a result of using them. Ultimately, many parents are uncomfortable with their children using smartphones

due to the cost and fragility of the devices. To control and manage the hazards they see, parents engage in a variety of behaviours, with excessive "screen time" and unsuitable content being of particular concern (Hinkley and McCaan, 2018).

Terras & Ramsay (2016) highlighted that our comprehension of the difficulties parents has in regulating their children's technology use is expanded when psychological influences are taken into account. He continued that a greater comprehension of children's motivations for using smartphones would improve parenting skills and increase parents' awareness of the myriad aspects that affect their children's behavior. For instance, using a broad age range of 6–15 years implies that 20% of their weekly use of all electronic gadgets is for smart devices. According to finer-grained research, smartphone use accounts for just 6% of time spent by children aged 6 to 11, but 35% of time spent by children aged 11 to 15, which is substantially higher than the reported adult (16 years and older) weekly use rate of 20% (Ofcom, 2016).

In their study, Bubbas *et al*, (2021) discovered that even while most parents could not limit how much time their kids spent on the gadgets, they were aware of the negative effects of smartphone usage. Sharp worries about the harmful effects of unrestrained smartphone use, such as sleep deprivation (Adams and Williford, 2013) and attention deficit (Matthew and Hamilton, 2014) have followed the recent explosive rise in smartphone adoption and use by teenagers. Because of this, many parents are uncomfortable or anxious about their kids using smart devices, even though they want them to be proficient with technology for their benefit.

Zainelabdin (2020) concluded their study to determine the negative effects of smartphones on children that parents were eager to instill good social habits that contribute to the development of the child's personality, as well as the development of an accurate and structured programme for children on the hours and times of their use of the smartphone to activate the role of social

institutions, especially the family, through the protection of children from programmes, videos, and applications and awareness of the seriousness of what is provided in the smartphone. There is mounting evidence that the amount of time kids spends using technology and using social media at home and school is having a negative influence on their development (Goh *et al*,2015).

2.3 Benefits and Negative Effects of Children’s Smartphone Use

In modern society, smartphones have taken the place of essential daily tools and play a significant role in research. Gladkaya *et al*, (2018) wrote that using smartphones among children has a wide range of negative effects and very few beneficial effects. He continued to explain that Children's learning experiences can be improved by using the numerous educational tools and apps available on smartphones. Cheung and Mak (2018) noted that instructional smartphone apps helped kids become better readers and academic performers. With the help of smartphones, kids can stay in touch with friends and family, promoting social connections and lowering feelings of loneliness. According to a study by Madell and Muncer (2015), they can make texting, voice calls, and video chats easier to use for communication. Oei and Patterson found in their study that games and apps for smartphones help improve cognitive abilities like memory, concentration, and problem-solving. They further stated that children's cognitive capacities were enhanced by gaming apps with strategic components.

Numerous types of research show that using smartphones negatively affects a child's sleep patterns. Screen time, especially used in the evening, causes people to go to bed later and sleep for fewer hours (Brambilla *et al*,2017). Even though the results of Chahal *et al*.'s (2013) study on children's cell phone use do not establish a link between nocturnal smartphone use and reduced sleep time, they do demonstrate that the mere presence of a cell phone in the bedroom shortens sleep time.

Importantly, nightly smartphone usage affects both the quantity and quality of sleep (Dube *et al.*, 2017).

According to Mustafaoğlu (2018), in preschool- and school-aged children, the use of digital technology has been linked to issues with sleep, aggression, physical inactivity, and lack of focus. Children squander their time inefficiently due to the overuse of digital technology. The influence that these technologies have on children's cognitive and emotional development should also be taken into consideration. Park and Park (2021) identified that several smartphone apps have been developed to be accessed and used intuitively, and to easily allow moves from one option to another to obtain interesting information, which could harm brain development and educational attainment. They further explained that children may be separated from real social interactions, including interactions with other children and the people around them. Overuse of smartphones can have a negative effect on academic achievement. High smartphone dependence was linked to lower academic attainment and increased levels of distraction during studying, according to research by Lee *et al.*, (2018).

The relationship between smartphone use and child development in children between the ages of 6 months and 2 years was examined in a study by Kabali *et al.* (2015). The study discovered that more handheld screen usage was linked to worse results on tests of language and cognitive development. To promote healthy development, the authors emphasized the significance of restricting smartphone use in early infancy. Excessive use of smartphones is associated with musculoskeletal pain (Xie *et al.*, 2016), traffic and pedestrian accidents (Cazzulino *et al.*, 2014), poorer physical fitness (headaches, weariness, dizziness, tension, memory loss, and hearing loss) (Alosaimi *et al.*, 2016), and academic difficulties (Lepp *et al.*, 2014).

Moreover, there is extensive evidence demonstrating the adverse effect of excessive smartphone use on mental health, such as stress (Venkatesh *et al.*, 2019), poor sleep quality (Demir and Sümer, 2019; Wang *et al.*, 2019), depression (Firat *et al.*, 2018), and anxiety (Hawi and Samaha, 2017). A separate investigation by Radesky *et al.*,(2016) investigated how parent-child relationships are impacted by parental mobile device use. The results showed that excessive parental smartphone use was linked to lower-quality interactions and less positive parent-child involvement. The child's social and emotional development may be hampered by these poor parent-child relationships. Researchers looked into the effects of excessive smartphone use on children and teenage obesity and levels of physical activity in a study by Chen *et al.*,(2020). The authors revealed that greater smartphone use was linked to decreased levels of physical activity and a higher risk of obesity. These findings highlight the significance of finding a balance between smartphone use and physical activity for healthy development.

Several factors could account for the mechanisms. Thomee, (2018) wrote that blue light from smartphones may interfere with melatonin levels excessive use of smartphones may result in physical discomfort like headaches and muscle aches, and exposure to electromagnetic fields (such as using a smartphone at night) may interfere with the activity of the brain (especially the pineal gland) and cause changes in cerebral blood flow and brain electrical activity, leading to poor sleep quality. Alonzo *et al.*,(2021) found significant correlations between heavy social media use and negative mental health outcomes, poor sleep quality, and negative mental health in their cross-sectional studies. The authors revealed that regular social media use was linked to both poor mental health and poor sleep outcomes in longitudinal studies. According to some studies, poor sleep quality mediates the link between teenage social media use and poor mental health outcomes.

2.4 Factors Influencing Children's Gadget Use

In recent years, the usage of gadgets by kids has increased, particularly among gaming consoles, cellphones, and tablets. Children's usage of technology is influenced by several elements, such as personal, familial, and environmental factors. Gentile *et al.*'s (2012) study showed that children's use of gadgets is influenced by their age and gender. They further explained that since they may participate in more age-appropriate games and activities, younger kids prefer to utilize gadgets more frequently. Boys and girls may have different interests and preferences because boys tend to utilize gadgets more frequently than women do (Fagot *et al.*, 2015). Children's use of gadgets is also influenced by personality factors. Children with higher degrees of impulsivity and sensation-seeking inclinations were shown to be more likely to engage in excessive gadget use, according to a study by Lemola *et al.*,(2015). Additionally, it was discovered that kids who had more self-control used their gadgets less.

Children's use of gadgets is significantly influenced by parental influence. According to research by Radesky *et al.*,(2016) and Kabali *et al.*,(2015), the parental gadget uses and parenting techniques were linked to children's gadget use. The study revealed that Children who had parents who used technology excessively were more likely to use technology more frequently themselves. Furthermore, kids with less frequent gadget use tended to be those whose parents established explicit guidelines and limits on their use. The use of gadgets by kids has also been connected to socioeconomic status. According to research by Rideout (2017), kids with lower SES backgrounds use gadgets more frequently. This can be a result of the lack of alternative resources and learning and entertainment options.

Children's use of gadgets is influenced by the media environment in which they are raised. As noted by Montgomery *et al.*,(2017), marketing and advertising of devices aimed at youngsters

encourage higher gadget use. They explained that children's preferences and motivations for using gadgets can also be shaped by exposure to media messages and peer pressure. Additionally, there are educational and school-related variables. Children's patterns of gadget use can be influenced by access to technology in educational contexts, such as the presence of digital learning initiatives. According to a study by Walsh *et al.*,(2018), kids who attended schools with more digital learning resources used their gadgets more frequently than kids who attended schools with fewer digital resources. Children's usage of technology might also be influenced by cultural influences. Children's attitudes and behaviours toward technology are influenced by cultural norms, beliefs, and expectations within a specific nation or group (Stephen *et al.*, 2013).

2.5 Parental Monitoring and Control Strategies

Concerns have been expressed about the possible harm that children's excessive smartphone use may do to many elements of their development. Strategies for parental supervision and monitoring are essential for controlling and minimizing excessive smartphone use. Active monitoring, such as talking about smartphone regulations, setting time limits, and frequently checking content and apps, was associated with reduced levels of excessive smartphone use in children, according to studies by Valkenburg and Peter (2013) and Madell and Muncer (2016). Active supervision enables parents to follow and participate in their child's smartphone activity.

The techniques parents employ to direct and interpret their child's smartphone use are referred to as parental mediation (Shin and Li, 2017). Along with advocating ethical smartphone use, this also includes talking about internet safety. The relevance of parental mediation in decreasing excessive smartphone use and encouraging positive digital behaviours in children was underlined by research by Livingstone and Helsper (2019). The key to minimizing excessive smartphone use is to

establish clear guidelines and restrictions. According to studies by Kabali *et al.*, (2015) and Radesky *et al.*, (2016), restricting screen time, designating device-free areas, and establishing technology-free hours are all useful techniques for reducing excessive smartphone use.

Parents act as role models for their kids when it comes to using smartphones. According to Domoff *et al.*, (2018) and Rideout *et al.*, (2017) studies, parents who used smartphones responsibly themselves were more likely to have kids who used them less excessively. Parents can have a beneficial impact on their child's smartphone usage habits by setting a good example. Open conversation about smartphone use among parents and kids encourages comprehension, confidence, and teamwork. Studies by Livingstone *et al.*, (2019) and Lenhart *et al.*, (2015) highlighted the value of continual discussion, outlining potential advantages and disadvantages, and addressing issues related to excessive smartphone use. Parental control over their child's smartphone use can be improved with good communication.

Parents can monitor and manage their child's smartphone use by using technological tools and parental control apps. The advantages of utilizing parental control applications to set time restrictions, filter content, and track usage were emphasized in studies by Kabali *et al.*, (2019) and Chassiakos *et al.*, (2016). The authors revealed that these technologies give parents more assistance in controlling their children's excessive smartphone use. In general, parental management and monitoring techniques are crucial in dealing with children's excessive smartphone use. Parents can effectively regulate and supervise their child's smartphone use by using active monitoring, parental mediation, clear rules, parental role modelling, open communication, and technology tools (Benedetto & Ingrassia, 2020). This will encourage good digital habits and reduce the risks associated with excessive use.

2.6 Barriers to Effective Parental Intervention

Parental intervention is essential in monitoring and minimizing children's excessive smartphone use, which is a behaviour that is becoming a rising cause for concern. However, several obstacles prevent parents from intervening effectively. Some parents can find it challenging to understand and keep an eye on their child's smartphone use because they lack technological proficiency (Yardi and Bruckman, 2011). According to research by Moreno *et al.*, (2018) and Kabali *et al.*, (2019), parents with less technology literacy may find it difficult to use monitoring applications or manage parental control settings, which limits their ability to step in. Effective intervention may be hampered by parental attitudes concerning smartphone use. According to a 2014 study by Van den Bulck and Van den Bergh, parents who saw smartphones as useful educational tools were less inclined to step in and place restrictions on their kids' smartphone use. Consistent intervention techniques could also be hampered by opposing attitudes and beliefs in the parental home.

Effective intervention may be hampered by inconsistent parental guidelines and enforcement surrounding smartphone use. According to Nikken and Schols' (2015) research, kids who had inconsistent rules and punishments for using their smartphones were more inclined to use them excessively. Consistency can lead to misunderstanding and reduce the effectiveness of parental guidance. Peer influence has a big impact on how children use smartphones, and when kids hear contradictory signals from their friends, it can make it harder for parents to intervene. According to a study by Lemmens *et al.*, (2017), peer pressure and norms had a significant impact on adolescents' smartphone use, frequently outweighing parental guidelines or limitations. Children might fight parental attempts to intervene and bargain for prolonged smartphone use. Smetaniuk's (2014) research found that kids used negotiation, persuasion, and defiance of authority to get more

access to smartphones. Parental reluctance to face opposition can make interventions less successful.

The time and effort parents invest in monitoring and regulating their children's smartphone use may be constrained by their busy schedules and their stress levels. According to a study by Weinstein *et al.*, (2018), parents who were more stressed out were less likely to use monitoring and intervention techniques that were effective. They further explained that. The amount and effects of their child's excessive smartphone use may go unnoticed by many parents. According to Mollbom *et al.*,(2022), parents frequently underestimate how much time their kids spend on smartphones and the potential drawbacks. This ignorance may make it more difficult for parents to intervene. The authors concluded that a multifaceted strategy is needed to overcome these obstacles, including increasing parental awareness, offering technical support and instruction, supporting clear and consistent regulations, and encouraging open communication between parents and children. Intervention programs that emphasize the value of balanced smartphone use and are directed at both parents and kids can assist in removing these obstacles and fostering positive smartphone habits (Nahum-Shani *et al.*, 2018).

2.7 Parental Awareness and Education

The use of smartphones by children in excess has become a common worry, and controlling and addressing this problem requires parental awareness and education. Parents' understanding of the advantages and disadvantages of smartphone use is essential for influencing their child's behaviour. The importance of educating parents about the potential risks, such as cyberbullying, privacy issues, and sleep disruption, as well as the potential benefits, such as educational resources and communication opportunities, was stressed in studies by Kabali *et al.*,(2015) and Radesky *et*

al,(2016). Teaching parents about these aspects might assist them in making wise choices and establishing reasonable smartphone usage restrictions.

Parental education initiatives have been successful in raising public awareness of the dangers of excessive smartphone use. According to research by Leung *et al*,(2014), parental awareness and behaviour improved as a result of a parent-focused intervention program that offered advice, support, and information on how to manage kids' smartphone use. These programs give parents the skills and tactics they need to deal with excessive smartphone use. The degree of their children's smartphone use and its possible drawbacks are often underestimated by parents, according to studies. According to Mollbom *et al*,(2022), parents frequently have little knowledge of how much time their kids spend on smartphones and how it can affect different elements of their development. In order to recognize and handle excessive smartphone use, parents must be aware of it.

Programs that teach media literacy and digital citizenship can increase parental knowledge of and comprehension of smartphone use. The need of teaching parents digital literacy, responsible online conduct, and critical thinking skills was underlined by studies by Livingstone *et al*,(2017) and O'Keeffe and Clarke-Pearson (2011). The authors wrote that these programs give parents the tools they need to understand the digital world and teach their kids how to responsibly use cell phones. Parents and kids need to have regular, open conversations regarding smartphone use. According to research by Lenhart *et al*,(2015), parents must regularly speak with their kids about the advantages, risks, and expectations of smartphone use. Between parents and children, effective communication encourages awareness, comprehension, and cooperation in regulating excessive smartphone use.

Giving parents access to expert assistance and resources can improve their knowledge of and comprehension of excessive smartphone use. According to research by Van den Bulck *et al*,(2018)

and Rideout and Robb (2017), healthcare professionals, educators, and community organizations can all be very helpful in providing parents with knowledge, direction, and resources. They further explained that these resources assist parents in navigating the difficulties caused by excessive smartphone use. The issue of youngsters using smartphones excessively can be better addressed by society if it encourages parental awareness and education. Growing parental awareness, understanding of the benefits and risks, and accessibility to education programs and resources enable parents to successfully supervise their kids' smartphone use and cultivate positive digital habits (Clark, 2013).

2.8 Theoretical framework

A theoretical framework is significant for guiding a study, maintaining coherence, and defining the study's boundaries (Anderson & Holloway, 2020). The study is guided by social cognitive theory, ecological system theory, and health belief model.

2.8.1 Social cognitive theory

Albert Bandura's social cognitive theory places a strong emphasis on how one's personality, surroundings, and conduct are all interconnected (Bussey & Bandura, 1999). This theory was selected because it can be used to comprehend parental knowledge of children's excessive smartphone use. The importance of observational learning, in which people pick up knowledge by seeing and imitating others' behaviour, is emphasized by the social cognitive theory. Parents may monitor the smartphone use patterns and actions of other parents or their children in the context of parental awareness of excessive smartphone use. Parental awareness worries and subsequent

intervention tactics may be influenced by children's experiences with excessive smartphone use and its effects on their social milieu.

Albert Bandura described Self-efficacy in his theory. According to Albert Bandura, Self-efficacy describes people's confidence in their capacity to carry out a specific behaviour successfully (Porter *et al.*, 2003). The level of knowledge, confidence, and actions parents take to control their children's smartphone use are all heavily influenced by parental self-efficacy in the study. A greater sense of awareness, proactive monitoring, and successful intervention techniques can result from higher levels of self-efficacy.

The importance of outcome expectations of people's ideas about the probable results or repercussions of particular behaviours is emphasized by the social cognitive theory (Lent *et al.*, 2017). Parental outcome expectations in the context of the study refer to parents' perceptions about the potential effects of excessive smartphone use on their children's development. These expectations may affect a parent's awareness, worries, and desire to step in. For instance, parents are more likely to be aware of the problem and take aggressive actions to remedy it if they think that excessive smartphone use may harm their kids' social or academic skills. Social cognitive theory can be used to evaluate how parental awareness, concerns, and intervention measures about excessive smartphone use are influenced by observational learning, self-efficacy, and result expectancies. Understanding the cognitive processes and social factors that affect parents' judgments and actions around their children's smartphone use is useful. Targeting these cognitive and social aspects can also help interventions and educational initiatives by raising parental awareness and promoting successful intervention techniques.

2.8.2 Ecological System Theory

Ecological Systems Theory, proposed by Urie Bronfenbrenner, focuses on the influence of various environmental systems on human development (Bronfenbrenner, 2000). It offers a comprehensive framework for examining parental awareness of excessive smartphone use. The Ecological Systems Theory (EST) offers a thorough framework to comprehend the effects of numerous environmental systems on parental awareness and intervention options, making it extremely relevant to the study on parental awareness of children's excessive smartphone use. The home, school, and peer group are examples of the immediate surroundings in which kids and parents interact. Parents can see and participate in their children's smartphone use within these microsystems. The norms, beliefs, and expectations of these microsystems as well as their direct observations of youngsters using smartphones in social and familial situations may have an impact on their awareness of excessive smartphone use.

The links and interactions between several microsystems are referred to as the mesosystem. The mesosystem can investigate how knowledge and experiences from multiple sources, including the school, community, and media, affect parental awareness of and perceptions of excessive smartphone use in the setting of the study (Chang, 2022). For instance, parents might get advice or information from schools or community organizations that affect how they perceive the problem and how they plan to intervene. The exosystem stands in for the larger societal systems that inadvertently affect parents' knowledge of and response to unrestrained smartphone use (Grandner, 2013). This covers cultural values, societal standards, and how smartphone use is portrayed in the media. Parental views, worries, and expectations around children's smartphone use can be influenced by these variables. Parental awareness and intervention techniques, for instance, may

be influenced by cultural norms surrounding technology usage or media coverage of the possible consequences of excessive smartphone use.

The larger social and cultural circumstances that affect parental awareness are included in the macro system. This encompasses socioeconomic variables, technological developments, and institutional frameworks (Townsend, 2016). These elements may affect how parents view excessive smartphone use, how much they know about it, and how they approach intervention. For instance, socioeconomic gaps may impact parental resources for monitoring smartphone use as well as access to cell phones. Researchers can explore the complex influences on parental awareness of excessive smartphone use by using Ecological Systems Theory. It enables the investigation of how many systems interact as well as the dynamic nature of the link between a child's environment and their parents. This viewpoint aids researchers in comprehending how cultural contexts, social systems, and environmental elements influence parental awareness, concerns, and intervention options. It also emphasizes how crucial it is to take into account the larger ecological context when developing interventions and assistance programs to encourage successful parental intervention regarding children's smartphone use.

2.8.3 Health Belief Model

In the 1950s, a group of social psychologists, led by Irwin M. Rosenstock, Godfrey M. Hochbaum, and Stephen Kegels, established the Health Belief Model (HBM). It was created to describe how people behave concerning their health and how they make decisions about health-related matters. The health belief model has been extensively employed in health psychology and public health research to comprehend and forecast people's reactions to information and treatment linked to their health. The health belief model contends that people's behaviour is influenced by how likely they believe they are to have a health problem. Parental perceived susceptibility in the context of the

study relates to parents' perceptions of how susceptible their kids are to the drawbacks of excessive smartphone use. Parents who believe their kids are more vulnerable may be more aware of and concerned about the problem. They are more likely to be aware of the possible hazards linked to heavy smartphone usage and take action to solve them.

The health belief model described "perceived severity" as how seriously and negatively parents see their children's excessive smartphone use (Green *et al.*, 2020). The likelihood that parents will be aware of the problem and take steps to solve it is higher if they believe that the negative effects of excessive smartphone use are serious. These repercussions could have a detrimental effect on one's physical health, emotional health, social interactions, or academic performance. For instance, parents are more likely to be aware of the problem and put mechanisms in place to restrict smartphone usage if they believe that excessive smartphone use can result in worse academic achievement, harmed social relationships, or a greater risk of cyberbullying.

The health belief model contends that people's behaviors are influenced by how they perceive the advantages of acting. Perceived benefits in the study's context refer to parents' perceptions of the benefits or advantages of controlling excessive smartphone use (Green *et al.*, 2020). Parents are more likely to be aware of the problem and use intervention measures if they see the benefits as greater child well-being, stronger family ties, or improved academic performance. Parents may be more inclined to intervene and actively control their children's smartphone use if they believe that doing so will improve family communication, sleep quality, or cognitive development, for instance.

Parents may encounter perceived roadblocks while attempting to manage their children's excessive smartphone use. Lack of information, contradicting counsel, worries about children's resistance, or trouble enforcing regulations are a few examples of these obstacles. Effective intervention

options may be difficult for parents to undertake if they believe there are significant barriers to awareness of the problem. To improve parental knowledge and intervention, it is crucial to recognize and overcome these alleged impediments. Giving parents the knowledge, tools, and techniques to get past these obstacles might help them better control how much time their kids spend on smartphones. Parents' self-efficacy is their faith in their capacity to carry out the advised actions. Increased awareness and proactive intervention techniques are linked to higher levels of parental self-efficacy. Parents who have faith in their ability to impose boundaries, set limitations, and enforce rules about smartphone use are more likely to be aware of the problem and take the necessary steps.

Interventions that boost parental efficacy, such as offering helpful advice and support, can help raise awareness of and effectively regulate excessive smartphone use. Researchers can explore parental attitudes, perceptions, and expectations surrounding excessive smartphone use by using the Health Belief Model. It clarifies how parents' awareness and intervention tactics are influenced by their perceptions of risk, severity, advantages, obstacles, and self-efficacy. This information can help in the creation of interventions and educational initiatives that tackle parental concerns and support efficient awareness-raising and intervention efforts surrounding kids' smartphone use.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the research methodology. It comprises the description of the study site; study population; inclusion and exclusion criteria; study design; sample size determination; sampling methods; data collection techniques and tools; data analysis; ethical considerations and study limitations.

3.2 Study Design

The study employed a cross-sectional survey design (Setia, 2016) to investigate into parental awareness of the health impacts of excessive smartphone/tablet usage among children in Tema in the Greater Accra Region of Ghana. Data were collected from the month of August to September 2023, using hardcopies of a structured questionnaire. A cross-sectional study gives a snapshot of a defined population at a particular point in time or records information on outcome and exposure at a single point in time. A cross-sectional design was used because it is relatively fast, it is logistically efficient and also it is often generalizable. Using a cross-sectional survey design, researchers can learn more about a population at a specific period.

3.3 Data Collection Techniques/ Instrument

The data for the study was collected using a printed questionnaire. The questionnaire was designed in both closed-ended and open-ended. However, the questionnaire was in three in two sections; the first comprised the respondents' demographic characteristics, and the second assess the usage of smart devices by school children and the last was factors associated with smartphone usage by children.

3.4 Study Population

The study's focus is to obtain parents' perspectives from the various private and international schools in the Tema Metropolis. In this regard, the study's population is parents who have their wards in private and international schools in Tema Metro.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion Criteria

The study included;

1. Parents whose children attend Private and International schools within the Metropolis.
2. Parents whose children are less than 15 years of age.
3. Parents whose children use smart electronic devices
4. Parents who have consented to participation in the study

3.5.2 Exclusion Criteria

The study excluded;

1. Parents whose children do not attend Private and International schools within the Metropolis.
2. Parents whose children are more than 15 years of age.
3. Parents whose children do not use smart electronic devices
4. Parents who have not consented to participation in the study

3.6 Study Variables

3.6.1 Dependent variable

The dependent variable is parental awareness. The level of awareness and understanding among parents regarding the health impacts of excessive smartphone and tablet usage in children.

3.6.2 Independent variables

The study utilized the following independent variables; mental development, parent characteristic, child's characteristic, and physical development

3.7 Sampling Technique and Sample Size

The case study was done within the Tema Metropolitan Assembly, specifically from Community One through to Community 12, where the both private and public schools were selected. The prevalence of children who regularly use smart device is 14% (Hosokawa et al., 2018). Adopting sample size formula by Cochran formula:

$$n = \frac{Z_{\alpha/2}^2 \times p(q)}{e^2}$$

Where:

n = sample size

Z = Z-score (1.96 for a 95% confidence level)

p = prevalence of children who regularly use smart device is 14% (Hosokawa et al., 2018).

q = 1 - p

e = margin of error (0.05)

Therefore;

$$n = \frac{1.96^2 \times 0.14 (1 - 0.14)}{0.05^2} \approx 185$$

However, to account for potential non-response or incomplete data, a slightly larger sample size was used. The addition of a non-response rate of 10%, gives $(185 \times 0.10 = 18.9 \approx 19)$ gives $19 + 185 = 204$. A total sample size of **204 respondents** was selected to participate on the study.

A multi-stage sampling technique was then used to recruit the study participants. First, the institutions were purposively selected. A randomized sampling method where all members in the

population had an equal chance of being chosen for the sample was then used to pick the children whose parents were invited to participate on the survey.

3.8 Pre-testing

To enable the researcher to test the reliability of the questionnaires, pre-testing of the instrument was conducted. The pre-testing was carried out to ensure the planning of the main study and to enable study tools to be corrected to ensure reliability and validity. It helped in finding out whether there was a need to re-arranges the response categories to a particular question or to let it remain as it is. Pre-testing enabled the researcher to discover possible weaknesses, inadequacies and ambiguities in the research instruments so that they could be corrected before the actual data collection takes place. 10 percent of the copies of sample questionnaires were pre-tested.

3.9 Validity and Reliability

Researchers utilize the concepts of validity and reliability to assess the quality of a study's findings. The extent to which a study captures what it set out to capture is called validity. Reliability, however, refers to the consistency and stability of the study's findings throughout time and in many contexts. In other words, sound research yields dependable and consistent results and measures what it promises to measure.

According to (Bless *et al.*, 2006), reliability includes the exactness of the instrument. Whether it can be trusted to provide a precise and constant calculation of an endless amount, an instrument is highly reliable.

3.10 Data Handling and Confidentiality

All the participants in this study were assured that the information they shall be provided for the survey was treated strictly as confidential. Thus, all information about them shall be protected to

my capacity. Their names and locations were not included in the study reports. However, participants were individually approached to seek their consent to participate in the study voluntarily. The researcher explained the purpose of the study, confidentiality procedures, risks involved, benefits and the freedom to opt out of the study at any time. A participant who opts out of the study was excluded and were not be persuaded or forced in any form to participate in the study. The study data was in the researcher's and her supervisors' care.

3.11 Data Collection Procedure

The data collection took place at the selected schools in the Tema communities. Research assistants were hired and trained to help collect data in the Tema Metropolitan. Participants were provided with hardcopies of the survey questionnaire by the research assistants. They were instructed to complete the survey and all data were collected. The questions on parental awareness of the health impacts of excessive smartphones/ tablet usage in children were asked in English. It took 15 to 30 minutes to finish the questionnaire on each respondent. All of the questionnaires were checked for accuracy and completeness at the conclusion of each data collection session. Up until the study's required sample size was reached, this process was continued.

3.12 Data Processing

Data collected with questionnaires was screened for completeness and errors. The data was entered using Statistical Product for Social Sciences version 26.0. The principal investigator was responsible for data cleaning and management. The original entry on the questionnaire was used as source data. Soft copies of all datasets and work done were sent to the supervisor by e-mail and on an external drive.

3.13 Statistical Data Analysis

The gathered data was crosschecked for completeness and consistency then coded and entered into Epi Data version 4.1 statistical program. Data was cleaned and exported to STATA version 17.0 for analysis. Descriptive statistics were used to describe all variables. Frequency distribution was used to compute proportions on all categorical variables. Precise measures of central tendencies such as frequency, percentages, mean and standard deviation. The categorical and numerical data was described using simple proportions and means. A bivariate analysis was done using a Chi-square test to identify the association between gadget usage (dependent variable) and demographic factors (independent variables) and other explanatory variables. A p-value of less than 0.05 at a 95% confidence interval was considered to show statistically significant factors throughout the data analysis. A binary logistic regression was carried out on variables that showed association in the bivariate analysis. The variables that showed statistical significance in the binary logistic regression were then incorporated into a multivariate logistic regression model for further analysis to determine the strength of association between gadget usage (dependent variable) and demographic factors (independent variables) and other explanatory variables.

3.14 Ethical Considerations

Ethical clearance was obtained from the Ethical Committee of the Ensign Global College of Public Health before the study began. Also, administrative permissions were sought from the participatory schools on the project. Oral informed consent was sought from participants after explaining the study to them before recruitment. Furthermore, this research sought the consent of participants by asking them to sign a consent form. Participants were made aware of the research objectives and were assured of anonymity and confidentiality for all information they provide. Participants were

also assured that at any point during the data collection, they had every right to withdraw without any consequences to their person, image or self-esteem.

3.15 Limitations of the Study

The study assessing parental awareness of the health impacts of excessive smartphone/tablet usage among children in the Greater Accra Region of Ghana had several limitations. These included the potential lack of a representative sample, reliance on self-report measures that could introduce bias, recall bias affecting accurate reporting, social desirability bias due to the sensitive topic, limited scope in assessing only awareness, and a cross-sectional design that couldn't capture changes over time. Additionally, the study focused solely on the Greater Accra Region, potentially limiting generalizability. Despite these limitations, the study provided valuable insights into parental awareness levels, which should be considered when interpreting its findings.

3.16 Assumptions

It was assumed that the selected respondents were met the set inclusion and exclusion criteria. Also, that the respondent could recall rightly any information that has happen in the past but was need to support the current request. Finally, that all the respondents were truth in their answers and have avoid the tendency to just please the researcher.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results of the data collected from the field. The researcher presented systematically, the data based on the research questions. These include; the sociodemographic characteristics, parents'/guardians' awareness of excessive use of smartphones and tablets, parents' perceived benefits of a negative effects of the gadget use, and factors associated with the gadget usage. A total of 204 questionnaires were administered to selected parents who have their children in either private or public schools in the Tema Municipality. However, 200 of them were retrieved as cleaned data and was use in the final analysis, thereby yielding a 98.04% response rate.

4.2 Sociodemographic Characteristics of Respondents (Parents)

Univariate analysis of the sociodemographic characteristics in terms of gender, age of parents, religion, marital status, educational level, etc. was conducted to understand their distributions. Majority of the parents are males and the minority are females which constitutes 51.0% and 49.0% respectively. With an average age of the parents being (40.06 ± 8.401) years. The result also showed the level of education with the highest frequency was High school and Bachelor which constituted 31.5% and 30.0%. However, the least recorded level of education is those parents who are JHS and High school leavers which comprises of 3.0% and 2.5% correspondently. Regarding the distribution of respondents' marital status, the largest category consists of 147 individuals who are married, accounting for 73.5% of the total. Also, 48 individuals are single, representing 24.0% of the total. The minority were 5 individuals in the sample who are divorced, making up 2.5% of the total. The majority of the study participants had 3 children, representing 28.5% of the total.

There were 49 individuals with two (2) children, accounting for 24.5% of the total. Also, there was one (1) individual with six (6) children, making up 0.5% of the total.

The distribution of parents' monthly income in the surveyed group shows that 42.6% of parents earn between GHc 1,000 and GHc 2,000. Additionally, 32.4% of parents reported a monthly income exceeding GHc 5,000. About 24.3% of parents have a monthly income falling in the range of GHS 2,000 to GHc 5,000 (Table 1).

Table 1: Demographic Characteristics of Parents

Variables	Frequency (N=200)	Percentages (%)
Parents age	Mean \pm SD (40.06 \pm 8.401)	
Gender of Parents		
Female	98	49.0
Male	102	51.0
Marital Status		
Divorced	5	2.5
Married	147	73.5
Single	48	24.0
Educational Level		
JHS	6	3.0
High School	68	34.0
Diploma	34	17.0
Bachelors	60	30.0
Postgraduate	32	16.0
Parent's Income		
1,000-2,000	63	42.6
2,001-5,000	36	24.3
>5,000	48	32.4
Household Size		
One	40	20.0

Two	49	24.5
Three	57	28.5
Four	37	18.5
Five	16	8.0
Six	1	.5

4.3 Sociodemographic Characteristics of Children

An analysis of the individual characteristics describing the children of the respondents revealed that there were 105 female and 95 male children in the sample, representing 52.5% and 47.5% respectively of the total. An overview of how the participants are distributed between Government and Private schools showed that the larger category consists of 117 individuals attended Private schools, accounting for 58.5% of the total sample size. The "Primary" grade school has the highest number of students, with a frequency of 104, constituting approximately 52.5% of the total student population. Following Primary, the "Junior High School" grade comprises 57 students, representing about 28.7% of the total student population. The "Nursery" grade accommodates 27 students, making up roughly 13.64% of the total student population. Lastly, the "Creche" grade has the lowest frequency, with only 2 students, representing approximately 1.0% of the total student population.

Table 2: Demographic Characteristics of Children

Variables	Frequency (N)	Percentages (%)
Child's age	Mean \pm SD (8.4 \pm 3.733)	
Gender of Children		
Female	105	52.5
Male	95	47.5
Type of School		

Private	117	58.5
Government	83	41.5
Grades of School		
Creche	2	1.0
Nursery	27	13.6
KG	10	5.0
Primary	104	52.5
JHS	57	28.7

Source: *Field Data, 2023*

4.4 Parents/Guardians Awareness of the Excessive Use of Smartphones and Tablets

This data suggests that the majority of children in the sample are using smart devices (87.5%), while a smaller portion are not (12.5%). In terms of types of smart device usage, the data reveals that 42.3% of respondents use smartphones, while an equal percentage also use tablets. A smaller portion, 13.5%, utilize laptops for their technological needs. A mere 1.9% of respondents reported using desktop computers.

Regarding the amount of time spent on smart devices, the data indicates that 16.5% of respondents spend around 30 minutes, while 33.0% allocate an hour. About 24.0% use their devices for approximately 2 hours, and a smaller 1.0% spend 3 hours. Another 8.5% of respondents also spend 3 hours on their devices. Additionally, 9.5% use smart devices for around 4 hours. It is worth noting that 7.5% of participants reported not spending any time (nil) on their smart devices.

In the study, 64.3% of participants reported imposing parental restrictions on their children's smartphone usage, while 35.7% stated that they did not enforce such restrictions. The survey revealed that 76.1% of respondents reported implementing parental supervision on their children's smartphone usage, whereas 23.9% indicated not applying any form of supervision (Table 3).

Table 3: Awareness of the Excessive Use of Smartphones and Tablets

Variables	Frequency (N)	Percentages (%)
Child Use of Smart Device		
No	25	12.5
Yes	175	87.5
Type of Smart Device Usage		
Smartphone	69	42.3
Tablet	69	42.3
Laptop	22	13.5
Desktop	3	1.9
Exact Count of Smart device per child		
None	15	7.5
One	120	60.0
Two	62	31.0
Three	3	1.5
How long does your child spend on the smart device?		
30 mins	33	16.5
1 hour	66	33.0
2 hours	48	24.0
3 hours	19	9.5
4 hours	19	9.5
Nil	15	7.5
Parental Restriction on Children Smart Device Usage		
Yes	126	63.0
No	74	37.0
Parental supervision on their Children's smart Device Usage		
Yes	150	75.00
No	50	25.00

Source: *Field Data, 2023*

4.5 Educational Performance of the Child

The evaluation of children educational performance indicated that 40.5% of the parents rated it as excellent, while 43.5% considered it very good. A smaller percentage found it good (3.0%), satisfactory (9.5%), or in need of attention (3.5%).

The data analysis concerning the impact of smartphone usage on educational performance revealed varying perceptions among respondents. The majority, comprising 56.5% of participants, did not see a connection between smartphone usage and their children's educational performance. On the other hand, 43.5% of respondents believed that their children's educational performance could be influenced by smartphone usage.

The analysis of children's participation in recreational programs revealed varying levels of engagement. A majority of 81.0% of respondents reported that their children participated in recreational programs occasionally. A smaller percentage of 16.0% indicated that their children never attended such programs. Only 3.0% of participants noted that their children often took part in recreational programs. This data underscores the predominant trend of occasional involvement in recreational activities among the surveyed group of children (Table 4).

Table 4: Educational performance of the studied children

Variables	Frequency (N)	Percentages (%)
Educational Performance		
Excellent	81	40.5
Very good	87	43.5
Good	6	3.0
Satisfactory	19	9.5
Need attention	7	3.5
Educational Performance due to Smart Device Usage		
Yes	91	45.5

No	109	54.5
Recreational Program Attendance by the child		
Often	6	3.0
Occasional	162	81.0
Never	32	16.0

Source: *Field survey (2023)*

4.6 Perceived Benefits and negative Impact of Using Gadgets

4.6.1 Perceived Benefits of Using Gadgets

Parents perceive various benefits from their children using gadgets. A significant portion, 50.0% of parents feel that gadgets assist their children with homework. About 45.5%, believe that gadget usage improves their child's grammar. Furthermore, 41.0% of parents think that gadgets boost their child's creativity. In terms of communication, 33.0% of parents see the benefit of easy communication through gadget usage (Table 5).

Table 5: Positive perception on the use of gadgets

Perceived Benefits of using Gadgets	Yes	
	Frequency	Percentages
Improves their Grammar	91	45.5
Boost their creativity	82	41.0
Helps them with their homework	100	50.0
Easy communication	66	33.0

Source: *Field survey (2023)*

4.6.2 Perceived Negative Impact of Using Gadgets

Parents identify several perceived negative impacts associated with their children's use of gadgets.

A substantial 49.0% of parents express concern about their children's lack of attention due to gadget usage. Additionally, 44.0% believe that using gadgets contributes to aggressive behavior in their children. Sleep problems, specifically insomnia, are a concern for 48.0% of parents. Around 33.5% of parents mention musculoskeletal issues resulting from gadget use.

Furthermore, 44.5% of parents are concerned about speech delay in their children due to gadget usage. Exposure to harmful online content is a worry for 52.0% of parents. Poor vision is a concern for 22.5% of parents, while a substantial 60.0% express concerns about smartphone addiction in their children (Table 6).

Table 6: Negative perception on the use of gadgets

Perceived Negative Impact of Using Gadgets	Yes	
	Frequency	Percent
Lack of attention	98	49.0
Aggressive behaviour	88	44.0
Sleep problems (Insomnia)	96	48.0
Musculoskeletal	67	33.5
Speech delay	89	44.5
Exposure to harmful online content	105	52.0
Poor vision	45	22.5
Addiction to the smartphone	120	60.0

Source: Field survey (2023)

4.7 Bivariate analysis of gadget use on other correlates

A Pearson's Chi-Square Test was conducted on selected variables with the reported usage of a smart device by the children to ascertain the level of statistical associations. At a p-value threshold of 0.05, it was observed from the results that most of the chosen indicators affirm strong significance. For example, the type of school the child attends had a statistically significant association with the usage of smart devices, either for playing or learning, at a p-value of <0.001 .

Similarly, the number of times spent by the child on the smart device, parental restriction and supervision on usage, and whether the child takes off time to undergo other recreational activities were all significantly associated with usage. However, it was observed that the gender of the child had no statistically significant association with the usage of a smart device by the children, as the results showed a p-value of 0.285 (Table 7).

Table 7: Bivariate analysis of gadget use on other correlates

Variables	Usage of smart gadgets		P-values
	No n(%)	Yes n(%)	
Gender of Children			0.285
Female	16 (64.00)	89 (50.86)	
Male	9 (36.00)	86 (49.14)	
Type of School			<0.001
Private	2 (8.00)	115 (65.71)	
Government	23 (92.00)	60 (34.29)	
Grade of School			0.112
Creche	0 (0.00)	2 (1.14)	
Nursery	0 (0.00)	27 (15.43)	
KG	0 (0.00)	10 (5.71)	
Primary	16 (64.00)	88 (50.29)	
JHS	9 (36.00)	48 (27.43)	

Time spent on the smart device			<0.001
30 mins	6 (24.00)	27 (15.43)	
1 hour	6 (24.00)	60 (34.29)	
2 hours	0 (0.00)	48 (27.43)	
3 hours	0 (0.00)	19 (10.86)	
4 hours	0 (0.00)	19 (10.86)	
Nil	13 (52.00)	2 (1.14)	
Parental Restriction on Smart Device Usage			0.004
Yes	9 (36.00)	117 (66.86)	
No	16 (64.00)	58 (33.14)	
Parental supervision on Children's Smart Device Usage			<0.001
Yes	7 (28.00)	143 (81.71)	
No	18 (72.00)	32 (18.29)	
Educational Performance			0.013
Excellent	8 (32.00)	73 (41.71)	
Very good	8 (32.00)	79 (45.14)	
Good	0.002	6 (3.43)	
Satisfactory	6 (24.00)	13 (7.43)	
Need attention	3 (12.00)	4 (2.29)	
Educational Performance due to Smartphone Usage			0.002
Yes	4 (16.00)	87 (49.71)	
No	21 (84.00)	88 (50.29)	
Recreational Program Attendance by the child			<0.001
Often	1 (4.00)	5 (2.86)	
Occasionally	9 (36.00)	153 (87.43)	
Never	15 (60.00)	17 (9.71)	

4.8 Multivariate logistic analysis selected variation on usage of Smart Device

The results in Table 8 below showed the predictive measures of the effects of selected variables on the usage of smart devices by children in both Crude and Adjusted logistic regression models. It was observed that

Attending a Government school serves as a protective factor against the use of smart devices in both models. A child attending such schools is 0.94 times less likely to use such devices compared to the counterpart who attends a Private school upon adjusting for all other covariate (AOR 0.06, C.I (0.00-6.00)). This could be a good thing given that the devices are negatively impacting the health of the child. It was also noted that a child had 15 times higher odds of using a device as against non-usage when offered parental supervision. After adjusting for all other variables in the model. A child who attends other recreational activities is 5.26 times more likely to use the smart gadget compared to the counterpart who might not (AOR 5.26, C.I (1.08-25.52)) controlling for all other factors. This could be coming on the back drop that most parents use that as a bait to allow the child access to the electronic devices at home.

There were however, no statistical significance on the measure of predictive effects of the gender of either the parent or the child on the use of a smart device in both unadjusted and adjusted models.

Table 8: Multiple logistic regression model of selected indicator on usage of smart device

Variables	Unadjusted		Adjusted	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Gender of Parents				
Male	1	-	1	-
Female	0.58 (0.31-1.69)	0.455	0.25 (0.05-1.19)	0.081
Marital Status				
Married	1	-	1	-
Divorced	0.18 (0.03-1.18)	0.074	0.19 (0.00-3.90)	0.215

Single	0.72 (0.28-1.86)	0.492	0,24 (0.04-1.50)	0.126
Educational Level				
Diploma	1	-	1	-
Bachelors	1	-	1	-
Postgraduate	0.19 (0.04-0.94)	0.042	0.46 (0.03-6.35)	0.563
JHS	0.28 (0.06-1.33)	0.110	1.08 (0.10-12.29)	0.949
High School	0.33 (0.03-4.40)	0.404	0.42 (0.02-11.60)	0.607
Gender of Children				
Male	1	-	1	-
Female	0.58 (0.24-1.39)	0.222	0.63 (0.15-2.74)	0.538
Type of School				
Private	1	-	1	-
Government	0.04 (0.01-0.20)	<0.001	0.06 (0.00-6.00)	0.016
Parental Restriction on Smart Device Usage				
No	1	-	1	-
Yes	3.59 (1.49-8.60)	0.004	0.83 (0.15-4.62)	0.827
Parental supervision on Children's Smart Device Usage				
No	1	-	1	-
Yes	0.09 (0.03-0.23)	<0.001	15.00 (2.45-91.72)	0.003
Educational performance				
Need attention	1	-	1	-
Excellent	6.84 (1.29-36.19)	0.024	0.63 (0.02-17.87)	0.790
Very good	7.41 (1.40-39.12)	0.018	0.2 (0.01-754)	0.385
Good	1	-	1	-
Satisfactory	1.63 (0.27-9.66)	0.593	0.10 (0.00-3.32)	0.197
Recreational Program				
Attendance by the child				
Never	1	-	1	-
Occasionally	15 (5.71-39.43)	<0.001	5.26 (1.08-25.52)	0.040
Often	4.41(0.46-42.13)	0.197	2.58 (0.12-55.98)	0.546

CHAPTER FIVE

DISCUSSIONS

5.1 Introduction

This chapter discusses the results from the field taking into consideration the specific objectives of the study.

5.2 Parents/Guardians Awareness of the Excessive Use of Smartphones and Tablets

The analysis of the collected data provides valuable insights into the prevailing trends of smart device usage among children, encompassing device types, usage durations, and the extent of parental involvement.

The study illustrates that a majority of children in the sample are actively engaging with smart devices, while a smaller portion abstains from their usage. The findings reveal that smartphones and tablets emerge as the dominant devices among the participants. This suggests a relatively balanced preference for both handheld devices and larger screen options, with laptops and desktop computers having notably lower levels of adoption.

In terms of the duration of smart device usage, the data unveils a diverse range of engagement patterns. While some children spend minimal time on their devices, others allocate more substantial periods. The spectrum spans from around 30 minutes to 4 hours, and even includes a segment of participants who reported spending no time on their smart devices. This distribution underscores the varying degrees of dependency on technology in the lives of children in the sample. Moawad & Ebrahim, (2016) wrote that teenagers spend a lot of time on their phones, computers, and various video games, which may be one of the main reasons why new technology may lead to a decline in face-to-face relationships like the one between an adolescent and their parent.

The research also delves into the realm of parental involvement in regulating children's smart device usage. It is evident that a significant proportion of parents actively impose restrictions on their children's interaction with smartphones. This suggests a keen awareness among parents about the potential impact of unrestricted device access on their children's well-being. Moreover, a substantial majority of respondents report implementing some form of parental supervision over their children's smartphone usage. This proactive approach to monitoring suggests an ongoing effort by parents to strike a balance between enabling technological exploration and ensuring responsible usage. A separate investigation by Radesky *et al.*, (2016) investigated how parent-child relationships are impacted by parental mobile device use. The results showed that excessive parental smartphone use was linked to lower-quality interactions and less positive parent-child involvement. The child's social and emotional development may be hampered by these poor parent-child relationships.

Conversely, a notable fraction of participants do not enforce any form of restrictions or supervision on their children's smartphone usage. This could indicate a range of parenting philosophies, from fostering trust in responsible device usage to potentially underestimating the need for active monitoring. According to a conclusive study on parental mediation, parents alter their mediation tactics per their beliefs about the diverse effects of media material on children (Nikken and Scholes, 2015). Parents of young children, in particular, are expected to take into account the importance of media for their children's development and adapt their parenting to these values because children today begin utilizing media at a young age (Australian Government, 2014).

The implications of these findings are multifaceted. Firstly, the high prevalence of smart device usage highlights the need for continued research into the potential consequences of extended screen time and the type of content children are exposed to. Secondly, the observed variations in

parental restrictions and supervision call for a deeper understanding of the factors influencing these decisions. Thirdly, the insights into device preferences and usage durations could inform educational strategies and content delivery methods tailored to children's evolving needs and habits.

Overall, the study underscores the prevalence of smart device usage among children, encompassing a diverse array of devices and usage durations. Furthermore, the insights into parental restrictions and supervision shed light on the multifaceted approaches that parents adopt to navigate their children's engagement with technology. This research serves as a foundation for deeper investigations into the effects of such usage patterns on children's development, health, and overall well-being.

5.3 Educational Performance of the Child

The assessment of children's educational performance in the study offered a glimpse into the array of parental viewpoints, with assessments spanning from the highest ratings of "excellent" and "very good" to less optimistic evaluations such as "satisfactory" or "in need of attention." This diversity of opinions reflects the wide range of standards, expectations, and benchmarks that parents hold regarding their children's academic achievements. These varying perceptions could point to differences in how parents view their child's progress, possibly influenced by factors such as individual academic goals, cultural values, and educational priorities.

When considering the potential impact of smartphone usage on educational performance, the responses indicated a clear division among participants. While a majority of respondents did not establish a direct link between their children's engagement with smartphones and their academic achievements, a significant portion believed that such usage could indeed influence their educational outcomes. This divergence in opinions emphasizes the complex and nuanced nature

of the relationship between technology and learning. It suggests that parents have differing beliefs about whether and how smartphones might either enhance or hinder their children's educational journey. This warrants further exploration into the mechanisms by which technology use might shape cognitive development, attention span, and learning outcomes.

The analysis of children's participation in recreational programs unearthed varying levels of engagement. The substantial majority of parents reported their children's occasional involvement in such programs, indicating that children tend to participate intermittently. A smaller group of parents noted that their children either never took part in these activities or did so frequently. This data underscores the importance of providing consistent opportunities for children to engage in extracurricular and recreational programs. Regular participation in such activities can contribute to holistic development, fostering skills beyond the classroom and enhancing social interactions. The relatively small percentage of children engaging frequently may indicate either an active interest in specific activities or an over-scheduled lifestyle that merits further investigation.

In conclusion, the study's findings showcase the diversity of parental perspectives on children's educational performance, the potential influence of smartphone usage on academics, and children's involvement in recreational programs. These insights shed light on the intricate interplay of factors that influence children's development, learning experiences, and overall well-being. Understanding these dynamics can aid educators, policymakers, and parents in fostering an environment that supports positive educational outcomes and holistic growth.

This relates to a study conducted by Lee et al. (2018) that sheds light on the significant impact of high smartphone dependence on academic attainment and the potential for increased distractions during study sessions. This research delves into the intricate relationship between smartphone usage and educational outcomes, providing valuable insights into the potential consequences of

excessive reliance on these devices. The findings of the study underscore a concerning pattern where high smartphone dependence is associated with lower academic achievement. Conversely, the observation made by Cheung and Mak (2018) regarding the positive impact of instructional smartphone apps on children's reading skills and academic performance highlights the potential educational benefits that technology can offer to young learners. Their findings contribute to the ongoing discourse about the role of digital tools in enhancing educational experiences.

5.4 Perceived Benefits and Negative Impact of Using Gadgets

5.4.1 Perceived Benefits of Using Gadgets

The study delves into the perceived benefits of children using gadgets, offering insights into parental viewpoints on how these technological devices positively influence their children's development and learning experiences.

Parents identified several advantages associated with gadget usage. A significant portion of parents highlighted the role of gadgets in assisting their children with homework. This observation reflects the integration of technology into education, where gadgets serve as tools for accessing supplementary learning materials, conducting research, and enhancing the overall educational experience. This perception underscores the evolving educational landscape, where gadgets are viewed as valuable assets in supporting traditional learning methods.

Furthermore, parents noted that gadget usage can contribute to improvements in their child's grammar skills. This suggests that parents recognize the potential of digital resources, applications, and interactive platforms to facilitate language learning and development. The association between gadget usage and enhanced grammar skills highlights the opportunities for language enrichment beyond conventional learning environments. The study supports Cheung and Mak (2018) who

noted that instructional smartphone apps helped kids become better readers and academic performers.

The study also revealed that parents perceive gadgets as catalysts for fostering creativity among their children. This viewpoint emphasizes the role of technology in promoting imaginative thinking, problem-solving, and artistic expression. The belief that gadgets can stimulate creativity underscores the significance of well-designed digital content that engages children's creativity and supports their cognitive growth.

Regarding communication, parents acknowledged that gadget usage facilitates easy and efficient communication. This recognition highlights the role of gadgets in connecting children with family members, peers, and educational communities. The perception of gadgets as communication tools underscores their potential to bridge social distances, enhance collaborative learning, and promote meaningful interactions among children.

These findings have several implications. Firstly, they underscore the importance of integrating technology in education to enhance learning outcomes. The recognition of gadgets' role in assisting with homework and improving grammar skills suggests opportunities for educators to leverage technology to create engaging and informative learning experiences.

Secondly, the acknowledgement of gadgets as tools for fostering creativity encourages the development of educational content that promotes creative thinking and exploration. This could involve the creation of interactive and imaginative applications that encourage children to think critically and express themselves artistically.

Lastly, the recognition of gadgets as communication enablers highlights the need for responsible digital citizenship education. Children should be taught how to use technology for effective and

respectful communication while understanding potential risks and challenges associated with online interactions.

In conclusion, the study's findings shed light on the positive perceptions that parents hold regarding the benefits of children using gadgets. These perceptions point to the potential of gadgets to support education, language development, creativity, and communication. These insights can inform educators, parents, and policymakers in effectively integrating technology into children's lives in ways that align with their developmental needs and educational goals.

5.4.2 Perceived Negative Impact of Using Gadgets

The perceived negative impacts associated with gadget usage hold several implications for parenting strategies, educational approaches, and the design of technology interventions. The concern surrounding attention spans urges a thoughtful approach to managing gadget exposure. It highlights the need for parents and educators to collaboratively foster a balance between gadget interactions and activities that promote sustained concentration, thereby mitigating potential challenges related to attention span deficits.

The apprehensions about aggressive behaviour underscore the importance of critical media consumption. Parents and guardians play a pivotal role in guiding children towards content that cultivates positive values and constructive behaviours, thereby countering any potential negative influences that gadgets might exert on behaviour.

The spotlight on sleep problems emphasizes the significance of establishing clear boundaries for gadget usage, particularly before bedtime. This underscores the role of parents in setting and maintaining routines that prioritize healthy sleep patterns and facilitate uninterrupted rest.

Furthermore, the concerns regarding musculoskeletal issues necessitate an emphasis on ergonomics and responsible gadget usage guidelines. Educating children about maintaining proper

posture and incorporating breaks during screen time can help mitigate the risk of physical discomfort and long-term health issues.

In conclusion, parental apprehensions regarding the negative impacts of gadget usage uncover potential challenges stemming from children's interaction with technology. These concerns underscore the importance of a comprehensive approach that encompasses responsible gadget use, parental guidance, and cultivating digital literacy in children. Addressing these concerns effectively necessitates collaborative efforts involving parents, educators, and technology providers, all working towards harnessing the benefits of technology while mitigating potential drawbacks.

5.5 Factors that affect the Gadgets usage

This study suggests that attending a government school serves as a protective factor against the use of smart devices. A child attending such schools is 0.94 times less likely to use such devices compared to the counterpart who attends a Private school. It was also noted that a child had 15 times higher odds of using a device as against non-usage when offered parental supervision. A child who attends other recreational activities is 5.26 times more likely to use the smart gadget compared to the counterpart who might not. There were however, no statistical significance on the measure of predictive effects of the gender of either the parent or the child on the use of a smart device in both unadjusted and adjusted models.

In relation to the type of school, attending a government school serves as a protective factor against the use of smart devices. A child attending such schools is 0.94 times less likely to use such devices compared to the counterpart who attends a private school (AOR 0.06, C.I (0.00-6.00)). This could be a good thing given that the devices are negatively impacting the health of the child. In contrast,

a study by (Gunnlaugsson et al., 2020) who reported results of a survey on the access to and use of digital technology among adolescents attending schools in the capital of Guinea-Bissau, Bissau argued that the most significant explanatory variables of having access to smart devices were children and adolescents who attends a private school.

The rapid integration of technology into everyday life has led to a significant increase in the use of smart devices among children. In this context, the role of parental supervision in moderating children's device usage has garnered considerable attention. A notable finding is that a child has 15 times higher odds of using a device when offered parental supervision compared to non-usage. This finding received extended support from previous studies (Nikken & Schols, 2015)(Murtaza, 2017). Possible explanations could be parents might view supervised device usage as an opportunity for educational enrichment or entertainment; By directly overseeing their online activities, parents can protect their children from inappropriate content, and supervision allows parents to guide children's exploration of the digital world. This finding underscores the intricate relationship between parental involvement and children's technology habits, and it prompts a deeper exploration of the dynamics at play.

Furthermore, children today are exposed to a wide array of digital devices that offer entertainment, education, and connectivity. A significant finding that emerges from this study is that a child who attends other recreational activities is 5.26 times more likely to use a smart gadget compared to their counterpart who might not (AOR 5.26, C.I (1.08-25.52)). This could be coming on the backdrop that most parents use that as a bait to allow the child access to the electronic devices at home. However, the finding suggests that despite the presence of traditional recreational options, children are more likely to be drawn to smart gadgets.

Lastly, there were, however, no statistical significance on the measure of predictive effects of the gender of either the parent or the child on the use of a smart device in both unadjusted and adjusted models. This finding is similar to findings by (Papadakis et al., 2022). The purpose of his study was to reveal various aspects of children's smart mobile use at home, such as the frequency of mobile device usage, preferred app types, and parent beliefs and strategies. Somewhat surprisingly, often mentioned factor like gender of either the parent or the child did not seem prognostic value. This finding is contrary to previous studies (Gentile *et al.*'s 2012; Fagot *et al.*, 2012) which have suggested that children's use of gadgets is influenced by their gender. Also, boys and girls may have different interests and preferences because boys tend to utilize gadgets more frequently than women do.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The chapter presents the conclusion and recommendations for the study based on the various research questions.

6.2 Conclusions

The study provides comprehensive insights into children's gadget usage, parental awareness, and educational performance. It reveals that most children actively engage with smartphones and tablets, while a subset refrains from their use. Smartphones and tablets have emerged as dominant devices, highlighting a balanced preference for handheld and larger screens. Device usage durations vary widely, reflecting diverse dependency levels on technology. Parental involvement is evident, with many imposing restrictions and supervision on gadget use. However, some parents opt for a more lenient approach. The study's implications underscore the need for ongoing research into screen time effects and tailored guidance for parents. Assessing children's educational performance, the study unveils diverse parental viewpoints on academic achievement, reflecting subjective standards and expectations. Opinions vary on the link between smartphone use and academics, illustrating the complex interplay of technology and learning. Involvement in recreational programs varies, emphasizing the importance of consistent extracurricular opportunities. Overall, the study provides a nuanced understanding of gadget use, parental strategies, and educational perspectives, offering insights into responsible technology integration and holistic child development in the digital age.

6.3 Recommendations

Based on the research findings, the following recommendations were made:

1. Parents should actively engage in discussions with their children about responsible gadget usage, content consumption, and online safety.
2. The Ministry of Education should foster collaboration between parents, educators, and technology developers to create educational apps and content that are engaging, interactive, and aligned with learning objectives.
3. Parents should be made aware via media handles on the Canadian pediatric screen time recommendation to prompt parents to adhere to them.
4. Parents should be good role models for their children by limiting their smartphone usage rather than telling their kids to avoid Smartphone use.

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APPENDIX

APPENDIX: Study Questionnaire

Dear parents,

Thank you for participating in this research. This questionnaire is to seek information on the study to investigate Parental awareness of the health impacts of excessive smartphone/Tablet usage among Children as a case study in the Tema Municipality, and any information given by respondents will be treated as confidential as possible. Your anonymity is also assured.

Thank You.

Kindly answer the following questions below and tick the following answers.

SECTION A – DEMOGRAPHICS

1. Gender of Parents a. Female b. Male.
2. Age
3. Level of Education
 - a. No education
 - b. High school
 - c. Diploma.....
 - d. Bachelor's degree
 - e. Postgraduate
 - f. Other
4. Religion: a. Christianity.... .b Islam.... b. Traditional..... c. Other (specify)
5. Marital status: a. Single.....b. Married..... c. Widowed..... d. Divorced.....
6. Occupation:
7. Monthly Income: a. GHS 1000-2,000..... b. GHS 2,000- 5000..... c. GHS > 5,000
8. Number of children:
9. Age of child
10. Gender of child.....

11. Name of school
12. Community of school
13. Is the school a government or private school
14. Grade of your child
 - a. Creche
 - b. Nursery
 - c. Kindergarten.....
 - d. Primary.....
 - e. High school

SECTION B – ASSESSING THE USAGE OF SMART DEVICES IN YOUR CHILD

15. Does your child use a smart device? Yes No.....
16. What do you think influences your child to use smart devices?
 - a. Depression a. Yes ... b. No.....
 - b. Social withdrawal a. Yes b. No
 - c. Impulsiveness a. Yes B. No
 - d. Boredom..... a. Yes..... b. No.....
17. Which Smart device does your child use? (Kindly tick the right answer)
 - a. Smartphone.....
 - b. Tablet
 - c. Laptop
 - d. Desktop.....
 - e. Other (specify)
18. At what age did your child first start using a Smart device?
 - 0- 12 months.....
 - 12- 24 months
 - 3- 5 years
 - 6-10 Years
 - 11- 15 years
19. How long does your child spend on their smart device?
 - a. 30 min
 - b. 1 hour
 - c. 2hours
 - d. 3 hours
 - e. 4 hours
 - f. 5 hours.....
20. What does your child use the smart device for?
 - a. Homework

- b. Video games
- c. Music/ Videos
- d. YouTube kids
- e. Social media).....
- f. Other (specify)

21. If your child watches Youtube kids on their smart device which program does he/ she often watch?

- a. Coco Melon.....
- b. Peppa Pig
- c. Pbs Kids
- d. Chuchu TV.....
- e. Netflix Jr.....
- f. Other (specify)

22. If your child uses the smart device on social media, which social handle is he or she often on?

- a. TikTok.....
- b. Instagram.....
- c. Facebook.....
- d. Twitter
- e. Other specify.....

23. Do you have any parental restrictions on their device? Yes No

24. Do you supervise when your child is using their smart device Yes NO.....

25. How do you supervise your child when using their Smart device

- a. Very Strict supervision
- b. Close supervision.....
- c. Minimal supervision
- d. No supervision

26. Do you set a time limit for the usage of any smart device at home Yes No.....

27. If Yes, state the time limit you give to your child

- a. 30 min
- b. 1hour
- c. 2-3hours
- d. 4-5 hours

28. Do you think your child gets enough sleep? Yes No

29. What time does your child usually go to bed at night?

- a. 6- 7 pm.....
- b. 7- 8 pm.....
- c. 8- 9 pm.....
- d. After 10 pm.....

30. What is the educational performance of the child

- a. Excellent
- b. Very good

- c. Satisfactory.....
 - d. Needs attention
31. Is the performance due to the use of the smart device? Yes NO.....
32. Does your child attend any recreational programs
- a. Often.....
 - b. Occasionally.....
 - c. Never.....
33. Can you tick the benefits of your child using a smartphone?
- a. Improves their Grammar
 - b. Boost their creativity
 - c. Helps them with their Homework
 - d. Easy communication
34. Can you tick the negative impacts the smartphone has had on your child??
- a. Lack of attention,
 - b. Aggressive behaviours,
 - c. Sleep problems (insomnia)
 - d. Musculoskeletal problems related to a sedentary lifestyle
 - e. Speech Delay
 - f. Exposure to harmful online content
 - g. Poor Vision.....
 - h. Addiction to the smartphone
35. Were you aware of any negative health impact the excessive usage of the smart device might have on your child? a. Yes..... b. No
36. Kindly Tick how you acquired the information about the negative health impact the smart device might have on your child.
- a. Media.....
 - b. Relative.....
 - c. Friends.....
 - d. Health worker.....
 - e. other (specify).....
37. Have you noticed any of the following in your child after the use of the smart device?
- a. nearsightedness,
 - b. Dry eyes.....
 - c. Blurry vision.....
 - d. Transient blindness.....
 - e. Severe headache.....
38. Have you ever sent your child to see the Optometrist / Ophthalmologist after them using a smart device? a. Yes b. No.....
39. If Yes was it due to the use of the Smart device? a. Yes b. No.....

40. Was the child given any Prescription spectacles or a protective device to aid with sight whilst using any smart device? a. Yes b. NO

41. Have you noticed any Physical health impacts in your child after them using a smart device?

- a. Neck/shoulder pain.....
- b. Lower-back pain.....
- c. Loss of concentration,
- d. Obesity.....
- e. Seizures
- f. Insomnia

42. Have you noticed any of the following Mental health impacts in your child after them using a smart device??

- a. Loneliness.....
- b. Anxiety.....
- c. Anger.....
- d. Depression.....
- e. Fear.....
- f. Annoyance.....
- g. Aggression.....
- h. Lethargy.....

43. Has the child developed any health issues diagnosed by a paediatrician or family physician due to the usage of a smart device? a. Yes b. No

44. If yes, kindly state the condition.

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**SECTION C: PARENTS' ATTITUDE TOWARD THE EXCESSIVE USE OF THE
SMART DEVICE**

45. Are you aware of the Canadian pediatric screen time recommendation below?
a. Yes b. No

Recommendation Screen time limits for Kids

UNDER 2 YEARS OLD

Zero screen time, except for video chatting with family and friends

2-5 YEARS OLD

No more than one (1) hour per day co-viewing with a parent or sibling.

5-17 YEARS OLD

Generally, no more than Two (2) hours per day, except for homework.

46. Do you think your child's smart device use is within the screen time recommendation? a. Yes
..... b. No
47. Assessing your current child's smart device usage and referring to new information on the
limitation of screen time for children, what will be your next action to limit your child?
a. I believe it will be difficult to control or do nothing
b. Implement the recommended time limits and control use
c. Stop the child from using the smart device
48. Kindly choose the following Suggested solutions for parents to minimize their children's overuse
of smart devices.
a. Use strict parental control to restrict SP usage time.....
b. Socialize as a family and go out for picnics, to farms, camping, etc.....
c. Increase parents' awareness of the fact that they are role models for their children.....
d. Use reward techniques (eg, "If you study hard, you can use your SP for an hour").....
e. Encourage children to join health clubs and undertake sports activities.....
49. Can the Ghana Government solve the issue of excessive use of smart devices in children? a. Yes
.... b. No
50. Kindly choose the Suggested solutions to aid the Ghana government to minimize the overuse of
smart devices in children.
a. Hold awareness sessions for school students regularly, such as presentations by health
specialists using examples of students who have suffered the detrimental effects of SP
overuse.
b. Improve the awareness of parents, including methods to reduce their children's smart
device overuse.
c. Monitor inappropriate programs for children and block them.
d. Use social media to provide advice and explain the detrimental impacts of SP overuse.
e. Arrange regular sports competitions for all ages in and outside schools for free and use
famous players to increase participation rates.
f. Establish more sports clubs to accommodate more participants.
g. Reactivate science club activities.

- h. Ensure computer classes at schools of all levels include lessons dealing specifically with the ideal use of SP devices, including recommended applications.
- i. Establish a free entertainment center in each region and arrange regular activities of all kinds throughout the year at minimal cost to attract participants of all ages.

In case of any emergency kindly contact the below:

Contact person:

Student: Buerkie Darkor

Ensign Global College

Tel: +233267814117

Email: buerkie.darkor@st.ensign.edu.gh