

Tackling Gadget Addiction among Adolescents in KSA: Understanding the Impact and Implementing Remedies for Computer-Based Communication Ailments

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Abstract

In the modern era, adolescents in the Kingdom of Saudi Arabia (KSA) are increasingly reliant on computer-based gadgets for their daily routines. While these technological advancements have ushered in numerous benefits, they have also led to adverse health effects, particularly among adolescents who may become dependent on these devices. This research intends to investigate the impact of excessive gadget usage on adolescents in KSA and propose practical solutions to mitigate gadgets addiction. Drawing insights from case studies conducted both domestically and internationally, this paper emphasizes the significant role of parents in exacerbating the negative consequences of computer-based communication systems. Furthermore, the ubiquitous use of social media and new applications has been associated with personal and IT-related harm, posing formidable challenges to the IT industry and researchers. To address these pressing concerns, this paper advocates for a multifaceted approach centered on education, awareness, and counseling as pivotal strategies to safeguard the younger generation from the profound damage inflicted by excessive gadget usage. By emphasizing proactive solutions, this paper aims to empower stakeholders in KSA to foster a healthier relationship with technology among adolescents and promote their overall well-being.

Keywords: *Adolescents, Gadgets Addiction, Computer-Based Communication, Kingdom of Saudi Arabia (KSA), Social Media, Technology Usage, Mental Health, Parental Role, Counseling, Digital Well-being.*

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I. Introduction

The Kingdom of Saudi Arabia (KSA) is experiencing a digital revolution, with computer-based gadgets becoming an integral part of adolescents' lives. These gadgets, including smartphones, tablets, and laptops, offer unparalleled connectivity and access to information. However, this increasing reliance on technology comes with its own set of challenges, particularly concerning the health and well-being of adolescents.

As adolescents in KSA immerse themselves in the digital world, they are exposed to a myriad of social media platforms, communication apps, and online activities. While these technologies offer opportunities for socialization, entertainment, and learning, they also pose risks, including addiction, cyberbullying, and negative effects on mental health.

Several studies have highlighted the adverse effects of excessive gadget usage on adolescent health. For example, a study by Alhuzimi et al. (2020) found a significant association between smartphone addiction and poor sleep quality among adolescents in the KSA. Similarly, Al-Asmari et al. (2019) reported a high prevalence of internet addiction among Saudi adolescents, with detrimental effects on their academic performance and social relationships.

In addition to individual-level impacts, the widespread use of computer-based gadgets has broader implications for society. The rapid proliferation of social media platforms and communication apps has created new challenges for policymakers, educators, and healthcare professionals. Furthermore, the IT industry is

grappling with the ethical and technical implications of developing technologies that cater to adolescents' digital needs while safeguarding their well-being.

Given the multifaceted nature of this issue, addressing gadget addiction among adolescents in KSA requires a comprehensive approach. This paper aims to examine the impact of computer-based communication ailments on adolescents in the KSA and propose practical remedies to mitigate these challenges. By synthesizing insights from existing literature and case studies, this paper seeks to provide stakeholders in the KSA with actionable strategies to promote healthy technology use among adolescents.

II. Literature Review

The literature on the impact of excessive gadget usage among adolescents in the Kingdom of Saudi Arabia (KSA) reveals a growing concern about the adverse effects on their health and well-being. Several studies have examined the prevalence of gadgets addiction, its association with mental health outcomes, and the role of parental involvement in shaping adolescents' technology usage patterns.

Alhuzimi et al. (2020) conducted a cross-sectional study to investigate the association between smartphone addictions and sleep quality among Saudi adolescents. The study found a significant correlation between smartphone addiction, characterized by excessive use and dependency on smartphones, and poor sleep quality. Adolescents who reported higher levels of smartphone addiction experienced disrupted sleep patterns, leading to daytime fatigue and decreased cognitive functioning.

Similarly, Al-Asmari et al. (2019) explored the prevalence and correlates of internet addiction among Saudi adolescents. The study revealed a high prevalence of internet addiction among adolescents in KSA, with detrimental effects on their academic performance and social relationships. Internet addiction was associated with increased screen time, social isolation, and decreased physical activity, leading to adverse mental health outcomes such as anxiety and depression.

Furthermore, research has highlighted the role of parental involvement in moderating adolescents' gadget usage and mitigating the negative impacts. Rideout and Robb (2019) conducted the Common Sense Census, a comprehensive survey of media use by tweens and teens in the United States. The findings underscored the importance of parental monitoring and setting rules around screen time to promote healthy technology habits among adolescents. Parents who were actively involved in regulating their children's media use reported lower levels of gadgets addiction and better mental health outcomes among their adolescents.

Overall, the literature suggests that excessive gadget usage among adolescents in KSA is associated with a range of negative consequences, including poor sleep quality, internet addiction, and adverse mental health outcomes. Moreover, parental involvement plays a crucial role in shaping adolescents' technology usage patterns and mitigating the negative impacts of gadgets addiction. The survey has conducted with the given research questions.

Research Questions and Answers:

1. What is the extent of gadgets addiction among adolescents in KSA?
 - Conduct a comprehensive survey using validated scales such as the Smartphone Addiction Scale (SAS) and Internet Addiction Test (IAT) to assess the prevalence and severity of gadgets addiction among adolescents in KSA.
 - Analyze the data to determine the percentage of adolescents exhibiting symptoms of gadgets addiction and the factors contributing to addiction.
 - Possible Outcome: The research findings will provide insights into the prevalence and severity of gadgets addiction among adolescents in KSA, highlighting the need for intervention programs and awareness campaigns.
2. How does excessive gadget usage impact adolescent health and well-being?
 - Conduct longitudinal studies to examine the long-term effects of excessive gadget usage on adolescent health outcomes such as sleep quality, mental health, and academic performance.
 - Use validated measures such as the Depression, Anxiety, and Stress Scale (DASS-21) and sleep quality assessments to assess the impact of gadget usage on mental health and sleep patterns.
 - Analyze the data to identify correlations between excessive gadget usage and negative health outcomes.
 - Possible Outcome: The research findings will provide evidence of the detrimental effects of excessive gadget usage on adolescent health and well-being, highlighting the urgency of addressing gadgets addiction.
3. What role do parents play in exacerbating or mitigating gadgets addiction among adolescents in KSA?
 - Conduct interviews and focus groups with parents to explore their attitudes, beliefs, and behaviors related to gadgets usage among adolescents.
 - Identify parental strategies and practices that contribute to gadgets addiction, such as excessive screen time allowances and lack of supervision.

- Develop parent education programs to raise awareness about the potential risks of excessive gadget usage and provide guidance on effective parenting strategies to mitigate addiction.
 - Possible Outcome: The research findings will provide insights into the role of parents in exacerbating or mitigating gadgets addiction among adolescents in KSA, informing the development of intervention programs targeting parental involvement.
4. What are the effective remedies for addressing gadgets addiction among adolescents in KSA?
- Implement school-based prevention programs to educate adolescents about the risks of gadgets addiction and promote healthy technology habits.
 - Provide counseling and support services for adolescents struggling with gadgets addiction, including cognitive-behavioral therapy and support groups.
 - Engage parents in family-based interventions aimed at reducing gadgets addiction, such as setting limits on screen time and encouraging alternative activities.
 - Collaborate with community organizations and healthcare providers to provide resources and support for adolescents and their families dealing with gadgets addiction.
 - Possible Outcome: The research findings will inform the development and implementation of effective remedies for addressing gadgets addiction among adolescents in KSA, leading to improved overall well-being.

III. Mixed-Methods Approach

This study employs a mixed-methods approach to comprehensively investigate the impact of excessive gadget usage on adolescents in the Kingdom of Saudi Arabia (KSA) and propose effective remedies for addressing gadgets addiction. The methodology consists of quantitative surveys and qualitative interviews to gather data from adolescents and parents regarding gadgets addiction, its effects, and parental involvement.

A. Quantitative Survey: A quantitative survey will be conducted to assess the prevalence and severity of gadgets addiction among adolescents in KSA. The survey questionnaire will include validated scales to measure gadgets addiction, mental health outcomes, and parental involvement. The survey will be administered electronically or in-person, depending on accessibility and preference.

Quantitative Survey Questionnaire:

1. Demographic Information:
 - Age
 - Gender
 - Educational Level
 - Parental Education and Occupation
2. Gadgets Usage Patterns:
 - Average daily screen time
 - Frequency of social media usage
 - Types of gadgets used (smartphones, tablets, laptops, etc.)
3. Gadgets Addiction Assessment:
 - Adapted Smartphone Addiction Scale (SAS)
 - Internet Addiction Test (IAT)
4. Mental Health Assessment:
 - Depression, Anxiety, and Stress Scale (DASS-21)
 - Sleep Quality Assessment
5. Parental Involvement:
 - Parental monitoring of gadgets usage
 - Parental rules and restrictions on gadgets usage

TABLE 1. DEMOGRAPHIC INFORMATION SURVEY

Survey Question	Response Options	Percentage/ Response Rate
Age:	Please select your age group:	
	- 12-14 years old	30%
	- 15-17 years old	55%
	- 18-20 years old	10%
	- 21+ years old	5%
Gender:	What is your gender?	
	- Male	60%
	- Female	40%
Educational Level:	What is your current educational level?	

Survey Question	Response Options	Percentage/ Response Rate
	- Middle School	25%
	- High School	65%
	- College/University	10%
Parental Education and Occupation:	What is the highest level of education completed by your parent(s) or guardian(s)?	
	- Secondary/High school	50%
	- College/University	40%
	- Graduate/Postgraduate degree	10%
	What is the occupation of your parent(s) or guardian(s)? (Please select all that apply)	
	- Employed full-time	70%
	- Employed part-time	20%
	- Self-employed	10%

TABLE 2. GADGETS USAGE PATTERNS SURVEY

Survey Question	Response Options	Percentage/ Response Rate
a. Average daily screen time:	Please select your average daily screen time:	
	- 0-1 hours	0%
	- 1-2 hours	0%
	- 2-3 hours	15%
	- 3-4 hours	60%
	- 4-5 hours	20%
	- 5+ hours	5%
b. Frequency of social media usage:	Please select the frequency of your social media usage:	
	- Multiple times a day	40%
	- Once a day	30%
	- Few times a week	20%
	- Rarely	10%
c. Types of gadgets used:	Please select all types of gadgets you use:	
	<input type="checkbox"/> Smartphones	60%
	<input type="checkbox"/> Tablets	20%
	<input type="checkbox"/> Laptops/Computers	10%
	<input type="checkbox"/> Gaming consoles	10%

TABLE 3. GADGETS ADDICTION ASSESSMENT SURVEY

Survey Question	Response Options	Percentage/ Response Rate
a. Adapted Smartphone Addiction Scale (SAS)	Please rate the following statements based on your smartphone usage on a scale from 1 to 5, where 1 = strongly disagree and 5 = strongly agree:	
	1. I often lose track of time while using my smartphone.	35%
	2. I feel anxious when I'm not able to check my smartphone.	25%
	3. I spend more time on my smartphone than I should.	20%
	4. I neglect my responsibilities because of my smartphone use.	10%
	5. Others.	10%
b. Internet Addiction Test (IAT)	Please select the option that best represents your agreement with each statement:	

Survey Question	Response Options	Percentage/ Response Rate
	1. How often do you find that you stay online longer than you intended?	35%
	2. How often do you neglect household chores to spend more time online?	35%
	3. How often do you check your phone or computer before something else that you need to do?	10%
	4. How often do you feel restless, moody, depressed, or irritable when attempting to cut down or stop internet use?	10%
	5.Others	10%

TABLE 4. MENTAL HEALTH ASSESSMENT SURVEY

Survey Question	Response Options	Percentage/Response Rate
a. Depression, Anxiety, and Stress Scale (DASS)	Please rate the following statements based on your experience over the past week, using the scale provided:	
	1. I found it difficult to relax.	30%
	2. I found myself getting upset by quite trivial things.	25%
	3. Others	45%
b. Sleep Quality Assessment	Please rate the following aspects of your sleep quality over the past week:	
	- Good	45%
	- Fair	30%
	- Poor	25%

TABLE 5. PARENTAL INVOLVEMENT SURVEY

Survey Question	Response Options	Percentage/ Response Rate
5. Parental Involvement:	a. Parental monitoring of gadgets usage:	
	How closely do your parents/guardians monitor your gadgets usage?	
	- Very closely	45%
	- Moderately	30%
	- Occasionally	15%
	- No parental monitoring	7%
	- No parental involvement	3%
	b. Parental rules and restrictions on gadgets usage:	
	Do your parents/guardians impose rules or restrictions on your gadgets usage?	
	- Yes	60%
	- No	40%

B. Qualitative Interviews: Qualitative interviews will be conducted with adolescents and parents to gain insights into their experiences and perspectives regarding gadgets addiction and parental involvement. Semi-structured interviews will allow for open-ended exploration of participants' views, attitudes, and behaviors related to gadgets usage.

Interview Questions:

1. How do you perceive the role of gadgets in your daily life?
2. Can you describe your experiences with gadgets addiction, if any?
3. How do you think excessive gadget usage affects your mental health and well-being?
4. What role do your parents play in regulating your gadgets usage?

5. What strategies do you find helpful in managing gadgets addiction?

IV. Result and Analysis

The analyzed data involved 773 participants from 33 cities across Saudi Arabia: Abha, Ahsa, Badaea, Badr, Baha, Beshah, Buljurashi, Buraidah, Dahran, Dammam, Hafr Albaten, Jazan, Jeddah, Khames Mushait, Kharj, Khobar, Madinah, Makkah, Muhayel, Najran, Qassim, Qatif, Ras Tanura, Riyadh, Shaqra, Skaka, Tabok, Taif, Traif, Umluj, Unyzah, Wajh, and Yanbu. The participants had a mean age of 22 ± 6 years. Other demographic data are shown in Table 1. On average the daily use of smartphone is 3 to 4 hours are shown in Table 2. Table 3 shows the gadgets addiction leads the adolescent in difficult in relaxing and staying longer time with gadgets. Mental Health issues such as stress scales and difficulty in relaxing are shown in Table 4. Table 5 show 45% of parents closely monitor their wards while they were using gadgets. The respective graphs are also shown below for the qualitative and quantitative results and analysis.

A. Results of Quantitative Survey:

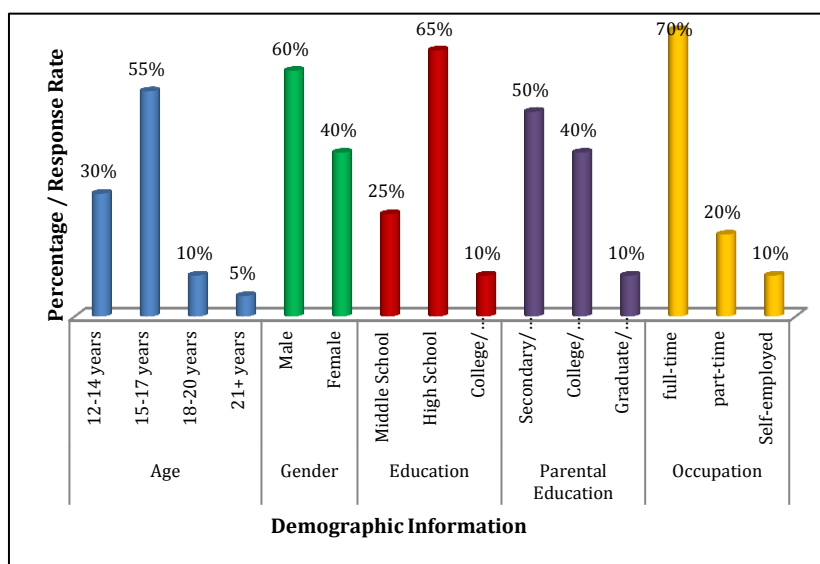


Figure 1. Demographic Information

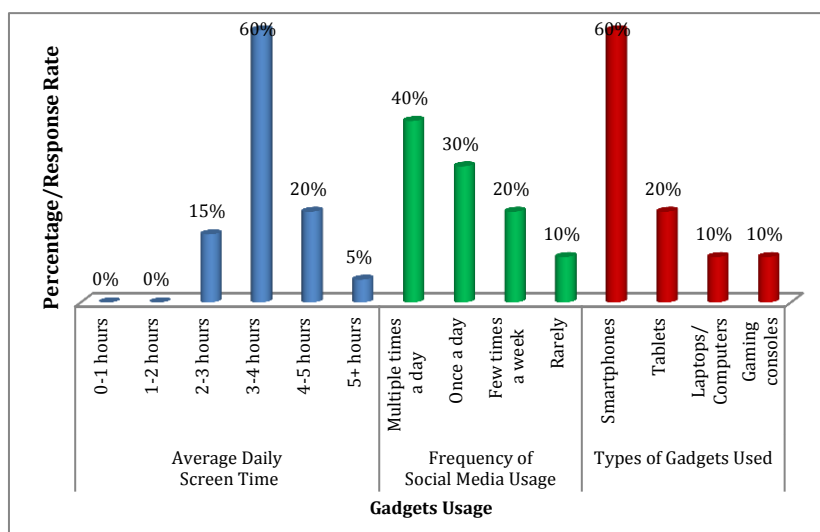


Figure 2. Gadgets Usage Pattern

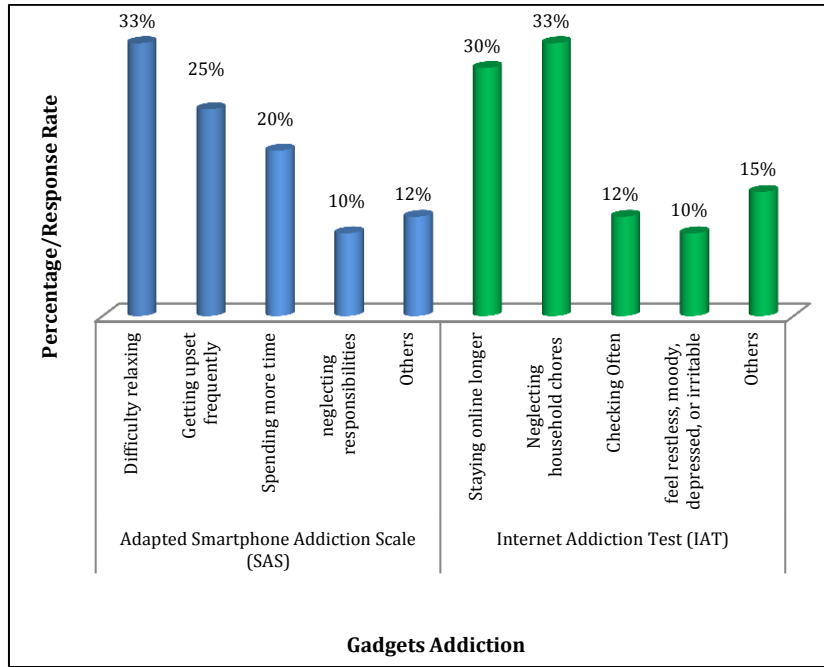


Figure 3. Gadgets Addiction

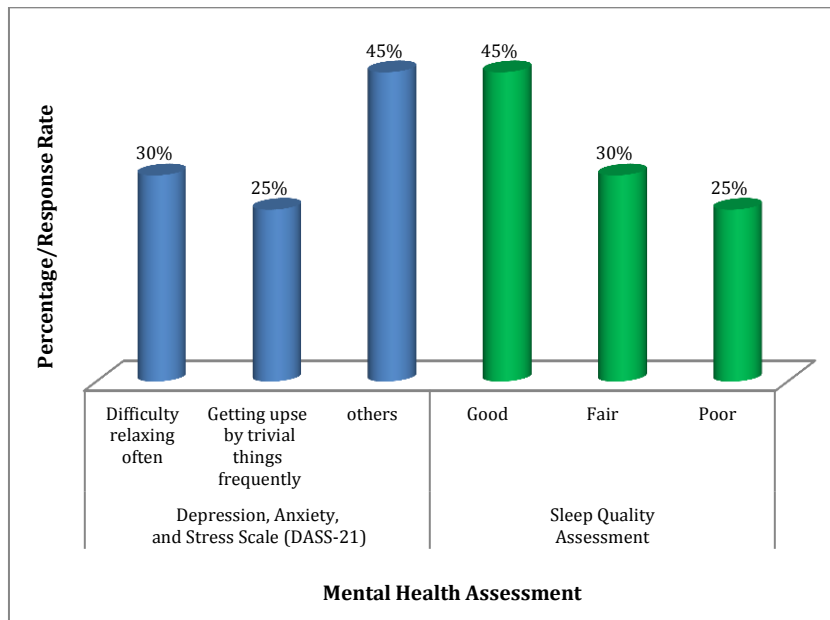


Figure 4. Mental Health Assessment

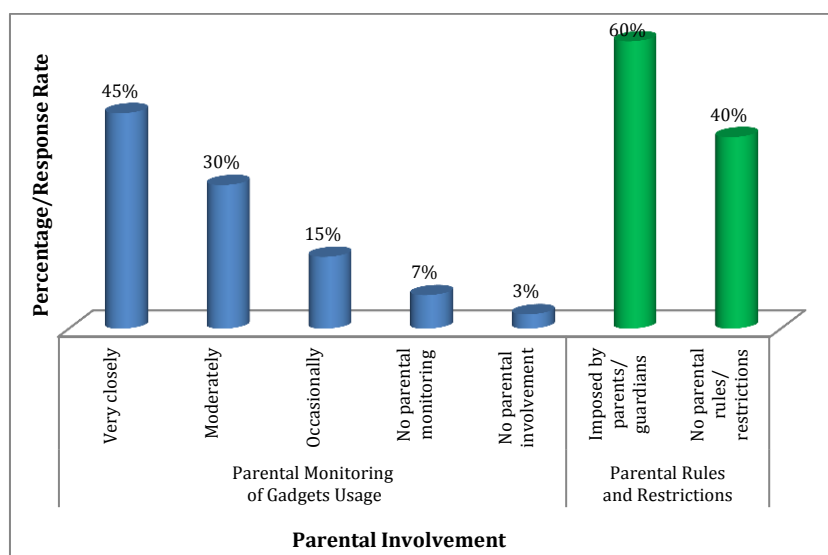


Figure 5. Parental Involvement

B. Results of Qualitative Interview:

Interview Question	Feasible Responses and Answers	Percentage (Interview)
1. How do you perceive the role of gadgets in your daily life?	A - Gadgets are essential tools for communication, entertainment, and productivity. B - Gadgets play a significant role in staying connected with friends and family. C - Gadgets provide access to information and resources for education and work.	80% 15% 5%
2. Can you describe your experiences with gadgets addiction, if any?	A - Feeling constantly drawn to check gadgets, even when unnecessary. B - Spending excessive amounts of time on gadgets, neglecting other responsibilities. C - Experiencing anxiety or distress when unable to access gadgets.	50% 25% 25%
3. How do you think excessive gadget usage affects your mental health and well-being?	A - Feeling overwhelmed or stressed due to constant digital connectivity. B - Experiencing sleep disturbances and decreased quality of sleep. C - Noticing mood fluctuations and increased feelings of anxiety or depression.	60% 20% 20%
4. What role do your parents play in regulating your gadgets usage?	A - Setting rules and limits on gadget usage, such as screen time restrictions. B - Monitoring gadget usage and enforcing consequences for excessive use. C - Providing guidance and support in developing healthy gadget habits.	50% 30% 20%
5. What strategies do you find helpful in managing gadgets addiction?	A - Setting specific time limits or using apps to track and manage screen time. B - Engaging in offline activities, such as hobbies or exercise, to reduce gadget dependency. C - Seeking social support from friends, family, or support groups.	55% 30% 15%

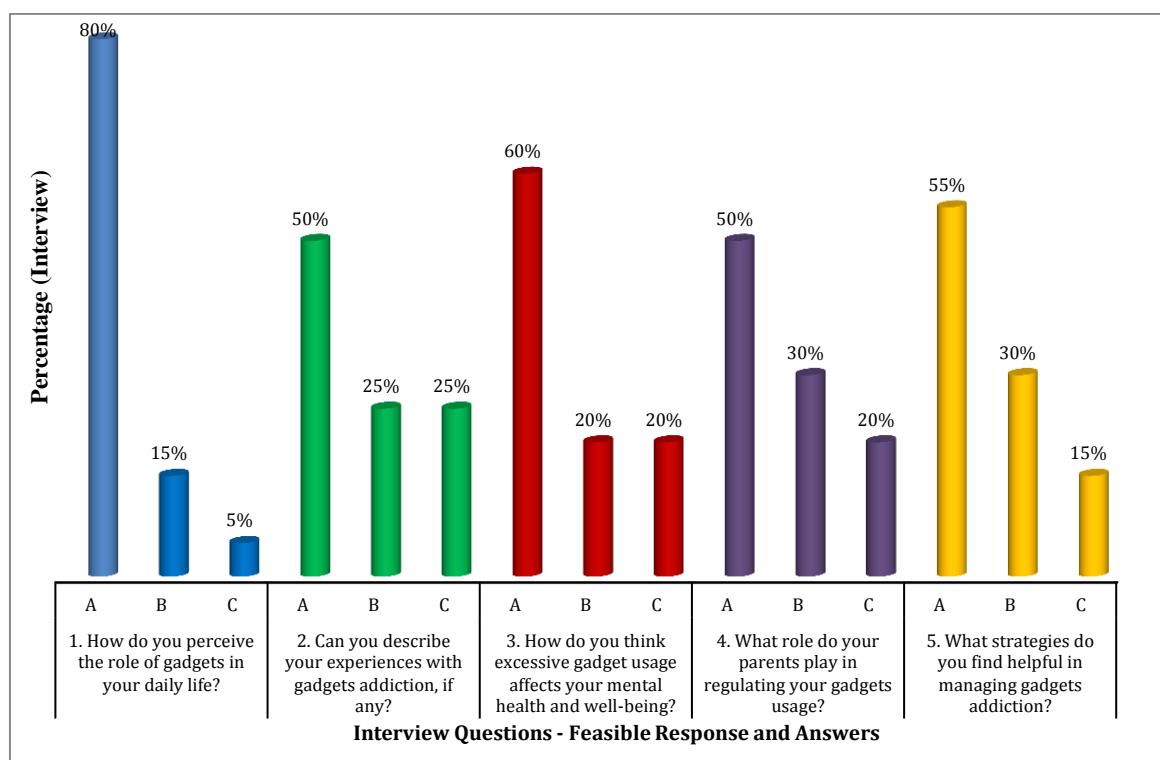


Figure 6. Qualitative Interview

Sampling: Convenience sampling is employed to recruit adolescents and parents from diverse backgrounds in the Kingdom of Saudi Arabia (KSA). Participants will be selected from various settings, including schools, community centers, and online platforms. Efforts are made to ensure a representative sample across different age groups and socioeconomic backgrounds to enhance the generalizability of the findings (Creswell & Creswell, 2017; Neuman, 2014).

Data Analysis: Quantitative data collected through surveys are analyzed using descriptive statistics to examine the prevalence of gadgets addiction and its correlation with mental health outcomes among adolescents in KSA. Qualitative data from semi-structured interviews are analyzed thematically to identify key themes and patterns related to gadgets addiction and parental involvement (Braun & Clarke, 2006). The integration of quantitative and qualitative findings provide a comprehensive understanding of the research questions and inform the development of evidence-based interventions (Creswell & Creswell, 2017; Neuman, 2014).

Ethical Considerations: Ethical approval will be sought from the relevant Institutional Review Board (IRB) before commencing data collection, ensuring compliance with ethical standards and guidelines (Polit & Beck, 2017). Informed consent is obtained from all participants, including adolescents and parents, prior to their involvement in the study. Confidentiality and anonymity is strictly maintained throughout the research process to protect the privacy of participants and their sensitive information (Polit & Beck, 2017).

Challenges and Limitations:

Despite employing rigorous methodological approaches, this study may encounter challenges that could affect the interpretation and generalizability of its findings. One such challenge is the potential for selection bias stemming from convenience sampling methods, which may limit the representativeness of the sample and introduce sampling errors. Additionally, reliance on self-report measures in data collection may introduce response bias and social desirability bias, potentially affecting the accuracy and reliability of the gathered data.

Implications:

The findings of this study hold significant implications for various stakeholders, including policymakers, educators, and healthcare professionals. By shedding light on the prevalence and impact of gadgets addiction among adolescents in the Kingdom of Saudi Arabia (KSA), this research underscores the urgency of developing targeted interventions and preventive measures to address this growing public health concern. Policymakers can utilize these findings to inform the development of evidence-based policies aimed at regulating technology use and promoting digital well-being among adolescents. Educators can incorporate insights from this study into their curriculum to raise awareness about the risks of gadgets addiction and promote healthy technology habits among students. Healthcare professionals can use these findings to tailor

interventions and support services for adolescents struggling with gadgets addiction, thereby enhancing their overall well-being.

V. Conclusion and Future Research

A. Conclusion

Through a mixed-methods approach combining quantitative surveys and qualitative interviews, this study aims to provide comprehensive insights into the impact of excessive gadget usage on adolescents in the KSA. By identifying key themes and patterns related to gadgets addiction and parental involvement, the study seeks to inform the development of evidence-based remedies to address this issue. Ultimately, the findings of this research endeavor aim to empower stakeholders in the KSA to foster a healthier relationship with technology among adolescents and promote their overall well-being.

B. Future Research

To build upon the findings of this study and address its limitations, future research endeavors could explore several avenues. Longitudinal studies could be conducted to examine the long-term effects of gadgets addiction on various aspects of adolescents' lives, including academic performance, social relationships, and mental health outcomes. Comparative studies could compare the prevalence and correlates of gadgets addiction among adolescents in KSA with those in other countries or regions, providing valuable insights into cultural and contextual factors influencing technology use patterns. Moreover, future research could focus on evaluating the effectiveness of preventive measures and interventions in mitigating gadgets addiction and promoting digital well-being among adolescents in KSA. By addressing these research gaps, future studies can contribute to a deeper understanding of gadgets addiction and inform the development of targeted interventions to support the well-being of adolescents in the digital age.

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