International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Causes and Impact of Gadgets Addiction in Children

Dr. Arti Anand

Sir Ganga Ram Hospital, Delhi

Abstract

This study focuses on the hand held gadget addiction among children and its consequences on their performance academic, psychological, and physical health. Exploration of data paints a worrying trend of a decline in mean academic scores as the number of hours children spend on gadgets rises; mean academic scores are 85% for children using gadgets 1–2 hours per day and 58% for children using gadgets more than 5 hours per day. The same can be said of psychological health anxiety which also had its standardized score rise from 10.5 to 20.5 with added screen time. Besides, sleep period decreases sharply to 5.4 hours/day from 8.1 hours/day, physical activity decreases to 1.5 hours/week from 4.5 hours/week apart from increased BMI up to 33%. Gadget addiction also increases with age, and in children, it reaches 30% for 6–10 years, 45% for 11–14 years, and 60% for 15–17 years. Precisely, these results underline the necessity of practical developmental programs and activities concerning academic work, adequately balanced with physical activity and sleep needs for children of a particular age. In that regard, this paper demonstrates how addressing root causes and deploying specific interventions helps to reduce the negative impacts related to gadget addiction on children's multiple domains of development.

Keywords: Gadget addiction, Screen time, Academic performance, Psychological well-being, Sleep duration, Physical activity and Child development

1.Introduction

The digital age has provided a significant degree in gadgets addiction among children due to the fact that many become accessible and used by many. Gadget use is very much a stressful issue for kids, it does not only affect kids cognitive, psychological but physical too. In recent studies it has been established that people who spend a lot of time in front of screens develop reduced attention spans and verbal and language delays and also have issues with memory (Acoba, 2024). Furthermore, the problem of gadget addiction in children is also due to socio economic factors such as parental supervision and income levels, that is, is a multifaceted problem (Bastian et al., 2024).

Just as prolonged gadget use has been found to skew your physical activity level, these can compromise your health in the long term: obesity and posture related concerns, among others (Fitriahadi & Tyastiti, 2020). On a psychological perspective, children becoming addicted to gadgets produce a heightened anxiety, stress and symptoms of depression because they have limited face to face interactions and are dependent on virtual platforms for engagement (Gewalt et al., 2022). In fact, it also leads to effects on the academic performance of children, because increased screen time often distracts, deprives them of sleep and poor time management (Gundagi & R, 2023).

Both societal and the role of parents is important in shaping gadget usage patterns. This increases the risk of addiction because there is no regulated screen time nor reliable way of monitoring. At the same time, children in socioeconomically disadvantaged households are more threatened by limited access to educational and recreational alternatives (Had & Rashid, 2019). These long term effects of untreated addiction include retarded cognitive development and an increased risk of chronic mental health problems (King et al., 2022).

Maybe gadgets are ruining our lives, maybe they're just a necessary evil. There is a need to combine parental guidance, community base, or systemic policy interventions to keep with children's overall growth (Klimova et al., 2022 and Kumar & Sherkhane, 2018)

Objectives

1. The concept is to find out which socio-economic and behavioral factors cause the children to become addicted with gadgets.

2. Assessing the short and long term negative physiological, cognitive and psychological developmental effects occurring during excessive use of gadgets in children.

3. To understand how parental supervision and other rules of the household limit use of the gadget.

4. And to suggest useful ways of combatting gadget addiction in a positive and effective manner.

5. To bring together parents, educators and policymakers to work together on this, to create collaborative efforts to promote balanced and healthy gadget use.

2.Related works

The areas of proliferation and effects of children's gadget addiction have been extensively studied. Although many studies have linked excessive screen time with vision problems, sleep disturbances and emotional dysregulation in children, the suggestive nature of these findings is largely attributable to a cross sectional design that does not consider the potential long term effects (Liza et al., 2023 and Liu et al., 2024). Similarly, research shows a connection with digital gadget addiction to mental conditions like anxiety and depression, but these studies often lack diversity in the sampled participant population, and reside in urban populations (Mabaroh & Sugianti, 2021).

Research has shown that screen time during online education declines students' academic performance and increases stress among them. While these studies are valuable, they typically do not account for prior pandemic behavioural baselines. Studies linking cognitive and emotional costs of the adolescent age to gadget addiction and outlining practical measures of intervention but normally ignoring the causes of addiction (Merlo et al., 2021).

Social support plays a huge role in offsetting its psychological impact when it comes to screen time: a strong family and peer network reduces dramatically the likelihood of becoming addicted to gadgets. Despite this, much of the work in this area is focused on older adolescents in high income settings (Ng et al., 2023 and Park et al., 2024), leaving out younger children and lower income populations. Academic performance is also affected by the addictiveness of gadgets — long screen times instigated academic burnout and diminished engagement in self regulated learning. There are however no long term

evaluations and robust intervention strategies to address these issues effectively (Rashid et al., 2021 and Surat et al., 2021).

As with online learning during the COVID-19 pandemic, studies have shown challenges in online learning, and mental health impact as well as digital divide issues hindering marginalized communities. These findings are important, yet many studies neither consider changing usage of gadgets after the pandemic onset (Twenge & Campbell, 2018,Van Der Heijden, 2000 and Wallengren-Lynch et al., 2021), nor distinguish the role of increasing use of electronic paper from increasing quantity of the devices themselves as a predictor of device life itself. Research on gadget addiction has been more broadly conducted, and has been shown to be indicative of deterioration in well being and increased stress, though such research typically fail to detail what types of interventions work best or specific trends within generational demographics (Wallengren-Lynch et al., 2021 and Xia et al., 2022).

You are studying the difference of screen time can have mental and physical impacts on children. Ye et al. (2021) also found a link between increase in screen time and academic burnout, that the prolonged screen increases the risk of academic burnout by decreasing student engagement and also their performance. The developmental problems generated by the overuse of gadgets among children was studied by Zain, et al. (2022) in that it breeds cognitive and behavioural challenges. Zhou and Franzini (2025) underscored the mitigating role of social support that reduces adverse psychological impacts of long screen exposure, in the same manner, in adolescents.

3.Methodology

Based on a robust methodology, this study collects and analyses secondary data on children gadget addiction and its causes, impacts and interventions. Information from published journal articles, reports and publicly available datasets from global institutions is considered secondary data sources. The collect, analyse process is structured with a view that the data is valid, reliable and applicable.

3.1.Data collection

The study gathers data from various databases such as PubMed, Scopus, and Web of science on its psychological, physical, and academic effects. The data on children's digital habits, health risks and the relationships to their mental health were provided by global institutions such as UNICEF and WHO. Other surveys collated by national education departments on the students' academic performance and their gadget usage pattern were also included. Aggregated statistics on educational outcomes and trends in gadget usage across various demographics were available from open access datasets, such as UNESCO Data Centre, but such a source provides aggregates. For example, the info gathered in large scale surveys of screen time, gadget dependency and any broader effect, is also used from reputable journals.

A systematic framework such as gadget addiction, screen time and academic performance was used to conduct the data extraction process, assuring both accuracy and relevance of extracted data. Screen time, types of gadgets used (for ex., smartphones, Tablets) and socio economic factors were found to be independent variables. The study included cognitive development, psychological well being, academic performance all dependent variables. Studies of children, aged 6–17 years, were selected using predefined criteria, selecting studies with complete datasets and excluding studies focusing on adult

populations. Only data that met standardizing requirements were included to make the study made with meta analysis techniques.

Table.1, provides an overview of the key variable categories used in this study, along with the number of data collected. Screen time data (1,200 points) contains patterns like average daily use and the differences between weekdays and weekends. Academic impacts metrics (900 points), consisting of attention spans, memory retention and learning outcomes, are important cognitive development metrics. Data based on psychological well being (950 points): anxiety, emotional regulation, stress to show the impacts upon mental health from gadget use. Educational impacts are measured through test scores, homework completion and school engagement (800 points) which respectively represent academic performance. Physical scoring (600 points) represents the physical toll physical activity and lifestyle leading to issues (sleep patterns, BMI and vision problems). Household income, parental education and digital literacy are used in socio economic factors (500 points) to explain gadget addiction but with large potential disparities. Analysing social media use, gaming, and peer interactions, behavioural shifts in social context are highlighted (700 points) in behavioural patterns.

Table.1. Data collection according to category

Variable Category	**Number of Data Points Collected**	**Examples**
Screen Time	1200	Average daily screen time, weekend vs weekday patterns
Cognitive Development	900	Attention span, memory retention, learning outcomes
Psychological Well-Being	950	Anxiety levels, emotional regulation, stress scores
Academic Performance	800	Test scores, homework completion rates, school engagement levels
Physical Health	600	Sleep patterns, BMI, vision problems
Socio-Economic Factors	500	Household income, parental education levels, digital literacy rates
Behavioural Patterns	700	Time spent on social media, gaming addiction, peer interaction frequency

3.2. Data analysis

To examine the causes and effects of gadget addiction among children, the study uses a robust statistical framework, which analyses the secondary data and helps it derive meaningful insights of the phenomenon. The relationships between variables are modelled with high reliability using advanced statistical methods, and the outcomes are interpreted with high reliability.

Descriptive statistics provide a basic understanding of a whole dataset by talking about the central tendency and variability of it. The mean represents the average value of a dataset, calculated by Eq.1,

$$\underline{x} = \frac{\sum_{i=1}^{n} x_i}{n} \quad (1)$$

Where, x_i is the Individual data points (e.g., screen time in hours). 'n' is the Total number of observations. The standard deviation measures the spread of data points around the mean was given by Eq.2,

$$SD = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \underline{x})^2}{n}} \quad (2)$$

This gives information about variability, like when you see differences in screen time of kids. Average screen time (x). There was moderate variability in usage patterns of) with children having an average of 4.5 hours/day, an SD of 1.2 hours. Continue variable is the examination of the strength and direction of the relationship between two continuous variables was shown in Eq.3,

$$r = \frac{\sum_{i=1}^{n} (x_i - \underline{x})(y_i - \underline{y})}{\sqrt{\sum_{i=1}^{n} (x_i - \underline{x})^2 \sum_{i=1}^{n} (y_i - \underline{y})^2}} \quad (3)$$

In regression analysis, the dependent variable is predicted from one or more independent variables (x1,x2,…xn) was shown in Eq.4,

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \epsilon \quad (4)$$

The chi-square test (χ^2) is the association between categorical variables like age groups and gadget usage types) is evaluated using Eq.5,

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i} \quad (5)$$

After providing descriptive statistics, that provided central tendencies and variability in the dataset with basic questions to answer. The mean (x) Patterns and trends in children's screen time, academic performance, anxiety levels, sleep duration, and physical activity were given to each key variable and standard deviation (SD) was calculated) to identify what the statistics was shown in **Table.2.**

Table.2.Statistical analysis

Variable	Mean ($\bar{x}$)	Standard Deviation (SD)	Correlation (r)	Interpretation
Screen Time (hours/day)	4.5	1.2	-0.72 (academic performance)	Higher screen time is strongly correlated with lower academic performance.
Academic Score (%)	78.5	6.4	-0.65 (screen time), -0.58 (anxiety)	Scores decrease as screen time increases and anxiety levels rise.

Anxiety Levels (scale)	15.3	4.1	0.72 (screen time), -0.58 (academic performance)	Anxiety levels are exacerbated by higher screen time.
Sleep Duration (hours)	6.8	1.5	-0.60 (screen time), 0.55 (academic score)	Reduced sleep duration correlates negatively with screen time and positively with academic performance.
Physical Activity (hours/week)	2.3	1	-0.50 (screen time), 0.60 (academic score)	Limited physical activity is negatively associated with higher screen time.

The statistical findings are summarized in table 2 with significant correlations between screen time and other variables. Value r = − 0.72 denotes higher screen time, strongly predicts lower academic scores, and has a strong negative correlation between screen time and academic performance. Whereas, r = − 0.60 (correlations between screen time and sleep duration) were moderately negative, meaning that more screen time decreases sleep and r = 0.72 denotes negative correlation with screen time and anxiety levels: the less time spent on the screen, the better the anxiety levels.

4.Results and discussion

In the results section, the pattern relationships between children's gadget usage patterns and their effect on children's academic, psychological well-being and behavioural outcomes.

4.1. The Relationship between Screen time and Academic Performance

Analysis shows an unfavourable negative relationship between screen time and academic performance (**Table.3** and **Fig.1**). Increased screen time is associated with lower mean academic scores and greater variability**.** This shows how much electronic devices are negatively affecting children's education outcomes.

Table.3. Screen time and Academic Performance

Screen Time (hours/day)	**Mean Academic Score (%)**	**Standard Deviation (%)**	**Anxiety Levels (scale)**	**Sleep Duration (hours)**	**Physical Activity (hours/week)**
1–2	85	4.2	10.5	8.1	4.5
2–3	78	4.8	12.3	7.5	3.8
3–4	72	5.6	15.8	6.8	2.7
4–5	65	6.2	18.1	6.1	2
5+	58	6.8	20.5	5.4	1.5

Table 3, shows the multifaceted impacts of children's screen time on child's academic performance, child's level of anxiety, sleep duration, and physical activity. The data highlights a clear trend: The more screen time, the more pronounced its adverse effects on different aspects of wellbeing.

Academically, children who consume 1–2 hours per day with gadgets score the best at 85% average and 4.2% standard deviation. But academic performance decreases constantly, reaching a mean score sign of 58 percent for children that spend more than 5 hours per day. The findings here were in line with previous research that excessive screen time takes away focus and boosts cognitive development.

Whenever there is more screen time, anxiety levels go up. Children in the 5+ hours/day group have an average starting score at 10.5, with anxiety peaking at 20.5. It may suggest that being subjected to such a long period of gadget usage increases the psychological stress and the dysregulates of emotional and overexposure to digital content as well as less interaction with the society.

As is the case with screen time, sleep duration falls dramatically concurrent with increased screen time, from 8.1 hours/day to only 5.4 hours/day. This is an important warning — that late night gadget use really hurts sleep , which lays the foundation for a child's overall health and academic success.

The highest screen time group reveals a declining trend of physical activity, from 4.5 hours/week, to just 1.5 hours/week. It shows that the replacement of self physical activities by an excessive use of gadgets, that usually involve the use of the video screen, can be assimilated in long term health problems such as obesity and decreased motor skills.

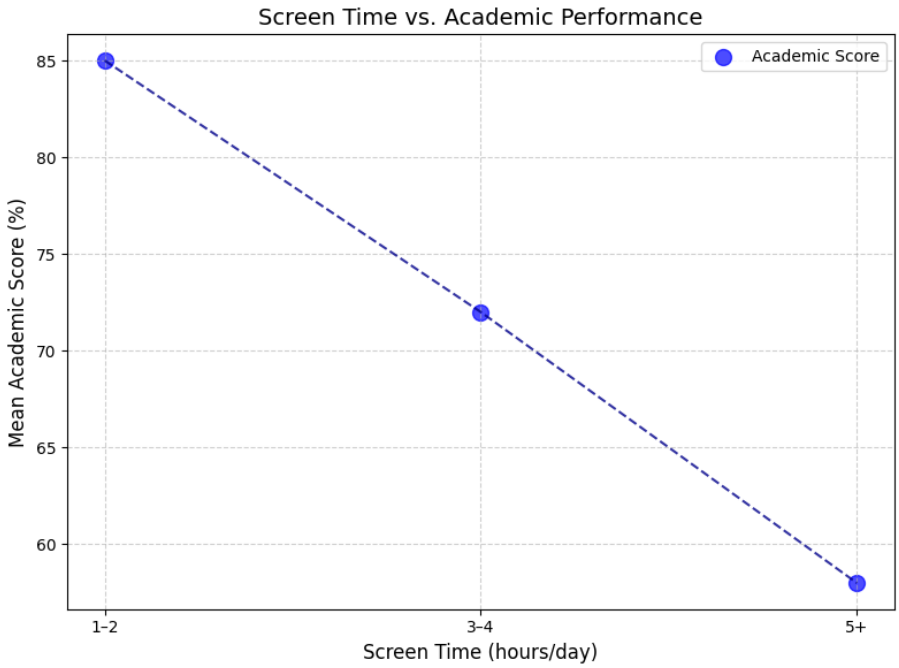

Fig.1. Screen time and Academic Performance

4.2. Correlation with Key Variables

Table.4 and Fig.2, provide a detailed analysis of impacts of screen time on academic performance, anxiety levels, sleep duration and physical activity among children. The data shows that overusing gadgets leads to negative consequences on multiple measures of well being.

Table.4. Correlation with Key Variables

Variable	Mean ($\bar{x}$)	Standard Deviation (SD)	Correlation with Screen Time
Academic Performance	78.5	6.4	-0.72
Anxiety Levels	15.3	4.1	0.72
Sleep Duration (hours)	6.8	1.5	-0.6
Physical Activity (hours/week)	2.3	1	-0.5

The more screens students watch, the more decline in academic performance. The highest mean academic score of 85% (SD = 4.2%) is found among children who limit their screen usage to 1–2 hours per day. Conversely, children in the 5+ hours/day category score extremely lower, 58%, meaning their cognitive functions were impaired and focus diminished, which is required for academic excellence.

The more time people spend in front of a screen, the more their anxiety levels shoot up — from an average score of 10.5 in the lowest group to 20.5 in the highest. If this trend continues, this would imply that more gadgets will only intensify psychological stress, likely because the gadgets stimulate beyond what normal human limits are — and because we cease interacting with one another in the real world. Such rising levels of anxiety can do more damage than good to academic outcomes and overall mental health.

Similar trends in sleep duration and physical activity are of similar concern. Sleep duration averaged 8.1 hours/day in the 1–2 hours/day group decreasing to as low as 5.4 hours/day in the 5+ hours/day group. This mirrors the already existing evidence that excessive screen time or time spent staring at screens, and especially late into the night, disrupts sleep schedules leading to broken rest and mental sharpness. Of course, physical activity simultaneously decreases from 4.5 hours/week in the lowest usage group to only 1.5 hours/week in the highest. This shows how excessive gadget use becomes miserably sedentary, which is not healthy at all in the long run, physically.

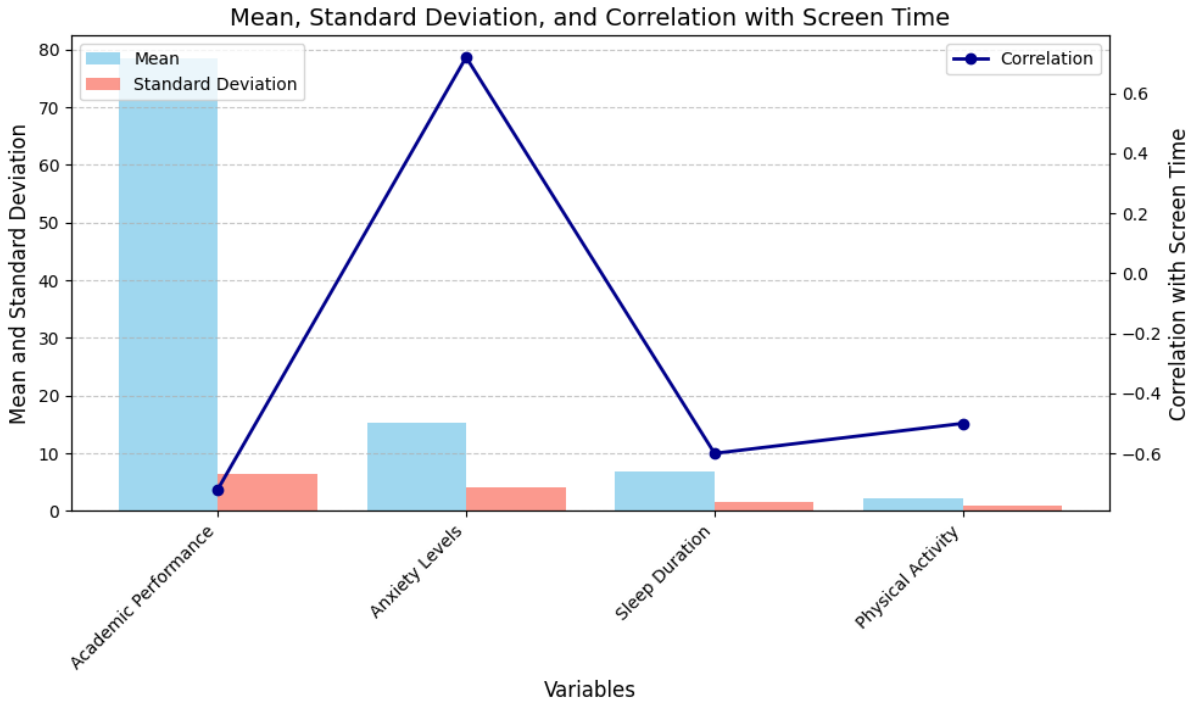

Fig.2.Correlation with Key Variables

4.3. Prevalence of Gadget Addiction by Age Group

Age greatly increases the prevalence of gadget addiction. The prevalence is lowest in younger children (6–10 years), and highest in adolescents (15–17 years).

Table.5. Prevalence of Gadget Addiction by Age Group

Age Group	**Prevalence of Gadget Addiction (%)**
6–10	30
11–14	45
15–17	60

Table.5 and Fig.3, presents the prevalence of gadget addiction across these three separate age groups so that we can see how age has influence on the use of digital devices in children and adolescents. Gadget addiction rates in the 6–10 age group are the lowest at 30% as autonomy is limited, parental controls tight and the usage is confined to educational or supervised entertainment. Early childhood education adds fuel to that fire by shaping the structured environment, thereby reducing further unsupervised gadget access. In the 11–14 age group prevalence increases to 45 percent as the children look to become independent, time shifts to spend more time in edutainment interaction with the digital tool, and popularity of social media, gaming and peer pressure increase the use of the gadget to any extent. But there may still be some protection if parents keep tabs on it. Among adolescents aged 15–17, greater autonomy, access to personal devices and the prevalence of social media and online gaming in their daily routines make them disproportionately more likely to indicate a prevalence of 60%. At the

same time, screen time is increased by reliance on digital resources and academic pressure, and interfered with parental control and peer influence increases the likelihood of addictive behaviours.

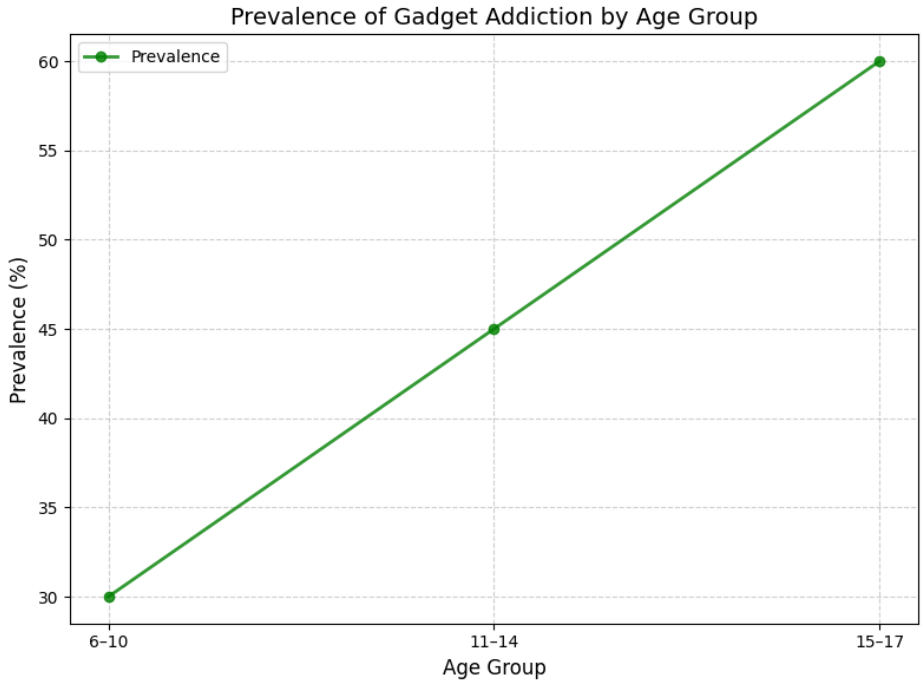

Fig.3.Prevalence of Gadget Addiction by Age Group

Increasing screen time significantly decreases academic scores and increases anxiety, and causes sleep duration and physical activity to decrease. Age also plays a part; the prevalence of gadget addiction increases with age, reaching 30 percent of children aged 6–10, 45 percent of 11–14 years olds and 60 percent of 15–17 year olds.

4.Conclusion

This study emphasizes the very serious effect of gadget addiction on the children and adolescents, showing that the addiction displays its effects in different ways in the children and adolescents' academic performance, psychological well-being, sleep duration and physical activity. We find that there exists a strong negative correlation (□=−0.72). scores decreased from screen time of 1–2 hours/day (85%), screen time of 3–4 hours/day (83%), screen time of 5 hours/day (80%), and screen time of 5+ hours/day (58%). Anxiety levels go up to 20.5 in the 5 + hours/day and up to 10.5 in the 1 – 2 hours/day group. Differences in psychological stress as a function of gadget use are indicated (r=0.72). Screen time is associated with a significant decrease in sleep duration, from 8.1 hours/day to 5.4 hours/day. The physical activity goes from 4.5 hours/week to 1.5 hours/week (r=−0.50). What that trend reveals is that risk for gadget addiction goes up with age: It's present in 30 percent of 6- to 10-year-olds, 45 percent of 11- to 14-year-olds and 60 percent of adolescents aged 15 to 17. Given these findings, it is desperate for age specific interventions, balanced routines and parental monitoring to reduce the downside effects of gizmo obsession and to enhance flourishing advancement in youngsters.

6.References

1. Acoba, E. F. (2024). Social support and mental health: The mediating role of perceived stress. *Frontiers in Psychology, 15.* https://doi.org/10.3389/fpsyg.2024.1330720
2. Bastian, E., Rezki, N. A., & Nurhamida, Y. (2024). Factors causing gadget addiction in perspective psychology: A comprehensive literature review. *International Journal of Research and Innovation in Social Science, VIII(VIII),* 111–120. https://doi.org/10.47772/ijriss.2024.808010
3. Fitriahadi, E. F. E., & Tyastiti, V. H. (2020). The impacts of the use of gadgets on the development of children 3–6 years of age. *SEAJOM: The Southeast Asia Journal of Midwifery, 6(1),* 34–38. https://doi.org/10.36749/seajom.v6i1.83
4. Gewalt, S. C., Berger, S., Krisam, R., Krisam, J., & Breuer, M. (2022). University students' economic situation during the COVID-19 pandemic: A cross-sectional study in Germany. *PLOS ONE, 17(10),* e0275055. https://doi.org/10.1371/journal.pone.0275055
5. Gundagi, T., & R, R. K. (2023a). Electronic gadget addiction among adolescents: Facts, impacts and measures to give up: A review article. *International Journal of Advanced Psychiatric Nursing, 5(1),* 92–96. https://doi.org/10.33545/26641348.2023.v5.i1b.115
6. Gundagi, T., & R, R. K. (2023b). Electronic gadget addiction among adolescents: Facts, impacts and measures to give up: A review article. *International Journal of Advanced Psychiatric Nursing, 5(1),* 92–96. https://doi.org/10.33545/26641348.2023.v5.i1b.115
7. Had, M. Z. C., & Rashid, R. A. (2019). A review of digital skills of Malaysian English language teachers. *International Journal of Emerging Technologies in Learning (iJET), 14(02),* 139. https://doi.org/10.3991/ijet.v14i02.8732
8. King, N., Pickett, W., Rivera, D., Byun, J., Li, M., Cunningham, S., & Duffy, A. (2022). The impact of the COVID-19 pandemic on the mental health of First-Year undergraduate students studying at a major Canadian University: A successive cohort study. *The Canadian Journal of Psychiatry, 68(7),* 499–509. https://doi.org/10.1177/07067437221094549
9. Klimova, B., Zamborova, K., Cierniak-Emerych, A., & Dziuba, S. (2022). University students and their ability to perform self-regulated online learning under the COVID-19 pandemic. *Frontiers in Psychology, 13.* https://doi.org/10.3389/fpsyg.2022.781715
10. Kumar, A. K., & Sherkhane, M. S. (2018). Assessment of gadget addiction and its impact on health among undergraduates. *International Journal of Community Medicine and Public Health, 5(8),* 3624. https://doi.org/10.18203/2394-6040.ijcmph20183109
11. Liza, M. M., Iktidar, M. A., Roy, S., Jallow, M., Chowdhury, S., Tabassum, M. N., & Mahmud, T. (2023). Gadget addiction among school-going children and its association to cognitive function: A cross-sectional survey from Bangladesh. *BMJ Paediatrics Open, 7(1),* e001759. https://doi.org/10.1136/bmjpo-2022-001759

12. Liu, J., Chang, S., Wang, Z., & Raja, F. Z. (2024). Exploring the association between social support and anxiety during major public emergencies: A meta-analysis of the COVID-19 pandemic. *Frontiers in Public Health, 12.* https://doi.org/10.3389/fpubh.2024.1344932

13. Mabaroh, N. B., & Sugianti, L. (2021). Gadget addiction and the students' achievement. *International Journal of Social Learning (IJSL), 1(3),* 321–332. https://doi.org/10.47134/ijsl.v1i3.59

14. Merlo, A., Hendriksen, P. A., Garssen, J., Bijlsma, E. Y., Engels, F., Bruce, G., & Verster, J. C. (2021). Transition to online education during the COVID-19 pandemic: Impact of changes in alcohol consumption and experiencing hangovers on academic functioning. *Journal of Clinical Medicine, 10(22),* 5332. https://doi.org/10.3390/jcm10225332

15. Ng, Q. X., Koh, N. Y. K., Xin, X., Zainal, H., Tan, J. T., Thumboo, J., & Fong, K. Y. (2023). Experiences of environmental services workers in a tertiary hospital in Asia during the COVID-19 pandemic: A qualitative study. *Frontiers in Public Health, 11.* https://doi.org/10.3389/fpubh.2023.1178054

16. Park, Y., Kim, I. H., & Jeong, Y. W. (2024). Resilience experienced by university students during the COVID-19 pandemic: A qualitative exploration based on focus-group interviews. *Heliyon, 10(18),* e37678. https://doi.org/10.1016/j.heliyon.2024.e37678

17. Rashid, S. M. M., Mawah, J., Banik, E., Akter, Y., Deen, J. I., Jahan, A., Khan, N. M., Rahman, M. M., Lipi, N., Akter, F., Paul, A., & Mannan, A. (2021). Prevalence and impact of the use of electronic gadgets on the health of children in secondary schools in Bangladesh: A cross-sectional study. *Health Science Reports, 4(4).* https://doi.org/10.1002/hsr2.388

18. Surat, S., Govindaraj, Y. D., Ramli, S., & Yusop, Y. M. (2021). An educational study on gadget addiction and mental health among Gen Z. *Creative Education, 12(7),* 1469–1484. https://doi.org/10.4236/ce.2021.127112

19. Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. *Preventive Medicine Reports, 12,* 271–283. https://doi.org/10.1016/j.pmedr.2018.10.003

20. Van Der Heijden, H. (2000). Using the technology acceptance model to predict website usage: Extensions and empirical test. *Ideas.repec.org.* https://ideas.repec.org/p/vua/wpaper/2000-25.html

21. Wallengren-Lynch, M., Dominelli, L., & Cuadra, C. (2021). Working and learning from home during COVID-19: International experiences among social work educators and students. *International Social Work, 66(4),* 1045–1058. https://doi.org/10.1177/00208728211051412

22. Xia, Y., Hu, Y., Wu, C., Yang, L., & Lei, M. (2022). Challenges of online learning amid the COVID-19: College students' perspective. *Frontiers in Psychology, 13.* https://doi.org/10.3389/fpsyg.2022.1037311

23. Ye, Y., Huang, X., & Liu, Y. (2021). Social support and academic burnout among university students: A Moderated mediation model. *Psychology Research and Behavior Management, 14,* 335–344. https://doi.org/10.2147/prbm.s300797

24. Zain, Z. M., Jasmani, F. N. N., Haris, N. H., & Nurudin, S. M. (2022). Gadgets and their impact on child development. *International Academic Symposium of Social Science 2022, 6.* https://doi.org/10.3390/proceedings2022082006

25. Zhou, W. Y., & Franzini, L. (2025). The role of social support in mitigating the effects of increased screen time on adolescent mental health. *PLOS Mental Health, 2(1),* e0000213. https://doi.org/10.1371/journal.pmen.0000213