FMDB *Transactions on Sustainable Techno Learning*

Prevalence and Determinants of Visual Media Addiction Among School-Aged Children

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Abstract: Children and adolescents grow up in a society where modern technology has become a crucial part of their daily lives. As a result, they are exposed to electronic devices from an early age and consequently to screen time (ST) viewing. The excessive use of visual media can hamper the children's growth and development and can lead to impulsive behaviour, disrupted sleep patterns, and consequently poor mental health. The present study aimed to assess the severity of visual media addiction among children aged 5-10 years in a selected community in Kannur District. A quantitative research survey approach, using a self-administered rating scale, was conducted. The sample consisted of 300 mothers of children aged 5-10 years in a selected community, selected through convenience sampling. The data were analysed using both descriptive and inferential statistics, in line with the study's objectives. The results of the study depicted that most (78.67%) of the children had mild addiction, whereas 18.67% of them had moderate addiction. Only 2.66% of the children had severe visual media addiction. There was a significant association between the severity of visual media addiction and demographic variables like religion (<0.022*) and employment status of parents (<0.018*). The study conducted among children aged 5-10 years revealed that many engage in visual media platforms for entertainment, and later it becomes an addiction, which is the greatest threat to the young generation.

Keywords: Visual Media Addiction; Screen Time (ST); Young Generation; Screen Overuse; Digital Dependency; Impulsive Behaviour; Sleep Disturbance; Mental Health; Electronic Devices.

Received on: 31/10/2024, **Revised on:** 25/12/2024, **Accepted on:** 08/03/2025, **Published on:** 11/12/2025

Journal Homepage: https://www.fmdbpub.com/user/journals/details/FTSTL

DOI: https://doi.org/10.69888/FTSTL.2025.000564

Cite as: N. Augustine, L. K. Johnson, S. Thavasiappan, N. Mannadath, and R. Chacko, "Prevalence and Determinants of Visual Media Addiction Among School-Aged Children," *FMDB Transactions on Sustainable Techno Learning*, vol. 3, no. 4, pp. 141–150, 2025.

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1. Introduction

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Growth and development encompass not only the physical changes that occur from infancy to adolescence, but also the changes in emotions, behaviour, personality, thinking, and speech that children develop as they begin to understand and interact with the world around them. Language, both verbal and written, plays a crucial role in communication [20]. Therefore, language must be developed early. Children's language development requires the role of learning media, which is essential [21]. In an era when digital devices are ubiquitous in our daily lives, managing children's screen time has become increasingly important. Studies suggest that children are spending up to eight hours a day in front of screens and are being overloaded with information at an alarming rate. A cross-sectional study was conducted among school students to document the influence of social media on them and to estimate the extent of social media addiction at a randomly selected school in Surat, an urban area in Western India, from March 2021 to June 2021 [3].

The sample comprised 434 students, selected using a random sampling technique. A semi-structured self-reported questionnaire was used to collect data to meet the study's objectives. Data analysis was conducted using descriptive and inferential statistics. The results depicted that among 434 students, the prevalence of social media addiction was found to be 23.5%. Girls were significantly associated with social media addiction. Overall, 26% of the students agreed that they were eager to use social media, 14% agreed that a life without social media would become meaningless to them, and 14.3% agreed that they were unhappy when they were not on social media. Overall, 21.5% reported decreased productivity due to social media use, and 12% reported physical problems. The researchers concluded that the risk factors for addiction were a younger age group (13-15 years), female gender, and students in standard 9. Academic performance was hampered for all students, irrespective of age. There was a negative effect on their interpersonal relationships and their mental and physical health.

A descriptive study was conducted to assess mothers' knowledge of middle school children and to examine the association between knowledge of mobile phone use and mobile phone addiction. The sample for this study consisted of 60 mothers of children aged 10-13 years in the Kollam district of Kerala, selected using non-probability, convenience sampling. The data were collected using a self-structured knowledge questionnaire in Google Forms, which was sent to mothers of middle school children via the Google platform. The results revealed that 10% of mothers had poor knowledge, 37% had average knowledge, and 53% had good knowledge. It was also found that there was a significant association between the genders of children, the education of the mother, the monthly income of the family, the type of family, and the knowledge regarding mobile phone addiction. A tertiary care hospital-based cross-sectional study was conducted to estimate media exposure among Indian children and its influence on early child development and behaviour in Chennai [4]. The sample consisted of 613 children aged 18 months to 12 years who visited the pediatric outpatient department, selected using convenience sampling.

The data were collected using the Problematic Media Use Measure Short Form (PMUM-SF), the Child Behaviour Checklist (CBCL), the Strengths and Difficulties Questionnaire (SDQ), and the Ages and Stages Questionnaire (ASQ3) for under-fives. The study found that the most common gadget was television, with smartphones ranking just behind it. The average daily screen time was 2.11 hours (mean + SD = 2.11 + 1.53), with a 95% CI of 2.11 + 0.12, observed in 40.1% of the study population. The prevalence of screen addiction was 28.1%, with the majority being boys. Increased screen time and media addiction were significantly associated with concerns in communication, problem-solving, and personal-social domains, as well as conduct, hyperactivity, and pervasive developmental disorder (PDD) problems. The researchers concluded that digital exposure among children has exceeded acceptable limits and must be curtailed.

2. Review of Literature

The addiction to visual media among school-aged children has emerged as a significant focus of global research, given the swift proliferation of digital technologies transforming childhood experiences, behaviours, and psychological development [16]. The increasing availability of smartphones, tablets, laptops, and televisions, along with the constant availability of digital content focused on enjoyment, has led to a big surge in children who use media too much and too often [1]. There are several types of visual media, such as internet video platforms, social media reels, video games, animation shows, and short-form material like what you get on modern smartphone apps. The transition from conventional passive screen viewing to interactive and immersive visual experiences has heightened concerns regarding potential addictive tendencies [2]. Researchers consistently contend that the contemporary digital ecosystem is engineered to optimise engagement through reward-based algorithms, autoplay features, personalised feeds, and visually stimulating elements, thereby significantly attracting younger audiences whose self-regulatory mechanisms remain underdeveloped [17].

The frequency of visual media addiction among youngsters varies across geographic, social, and cultural contexts; yet, studies from several regions indicate a constant upward trend. Surveys conducted in Asia, Europe, and North America reveal that 20 to 40 per cent of school-aged children have indicators of problematic screen use or reliance patterns akin to behavioural addiction [13]. The rise in screen time is mostly due to the popularity of short-form video apps and online gaming platforms [14]. Kids are drawn to these digital spaces because they offer instant gratification, quick transitions, vivid colours, funny

content, and social features. Studies show that kids spend 3 to 7 hours a day on screens, far more than the World Health Organisation's recommendation of no more than 2 hours a day for school-aged kids.

Excessive exposure has been associated with withdrawal-like symptoms, irritation, and persistent desires when access is limited, suggesting that the phenomena transcend routine usage and manifest as addiction-related behaviours [15]. To understand the factors driving visual media addiction, it is essential to analyse individual social, familial, psychological, and technological factors. Age is one of the most important individual factors [18]. Older kids, especially those just starting to become teenagers, are at higher risk because they are more independent, have greater access to personal gadgets, and are more sensitive to social pressure [5]. The phases of cognitive development are particularly important since younger kids can't control themselves or wait for things they want, which makes them more likely to be drawn to the sensory aspects of visual media. Impulsivity, inadequate self-discipline, a desire for new experiences, and a tendency to get bored easily make people much more likely to get addicted to media. Kids who have social anxiety, low self-esteem, or emotional instability typically use visual media platforms to cope, which can lead to dependence over time [19]. The likelihood of visual media addiction is greatly affected by the structure of the family and the way parents raise their children. Families that don't have strict guidelines on how to use devices and don't have set routines are likely to have more problems with addiction. Parents who often use digital media or rely on screens to keep their kids busy are unknowingly encouraging addictive tendencies [23]. Research shows that when parents use screens too much, their kids are more likely to do the same because of how kids learn from their parents.

Also, kids who live with both working parents and don't have enough supervision after school are more likely to watch unregulated media. Conversely, authoritative parenting approaches that blend warmth with strict boundaries correlate with less media reliance. The absence of emotional bonding and diminished quality time within the family serves as a catalyst, prompting youngsters to progressively redirect their focus from familial relationships to digital settings for comfort, stimulation, and engagement [24]. The school setting and peer groups also make visual media addiction worse. Peer norms and trends have a significant impact on kids, especially in digital environments where viral challenges, gaming successes, and short-video culture put a lot of social pressure on them to join in and stay up to date [25]. Stress from schoolwork and a lack of extracurricular activities might also make kids want to escape into the digital world to relax.

The COVID-19 epidemic made this situation worse by forcing schools all around the world to switch to remote learning, which meant more time spent on screens, and longer gadget use became the norm. Even after kids went back to school, they still spent a lot of time on screens, since they had gotten used to it during the lockdowns [22]. Psychological factors that lead to addiction to visual media include brain systems based on rewards. Digital platforms are deliberately engineered to stimulate dopaminergic pathways that elicit pleasurable emotions through variable reward systems, such as likes, shares, new levels, virtual achievements, and unpredictable content sequences [6]. Kids whose brains are still growing are especially sensitive to these things, which makes strong reinforcement cycles that push them to keep doing them. As time goes on, kids may lose interest in things they used to enjoy doing in person, such as reading, playing, and talking to people. This is because visual media becomes their main source of fun and excitement [7]. This displacement effect leads to problems in school, trouble sleeping, and a shorter attention span, which makes kids even more dependent on fast-paced digital stuff to keep their minds active [26].

Socioeconomic issues are also quite important. In homes with fewer resources for outdoor activities, recreational programs, or supervised places, kids may use digital media more for fun and to interact with others [27]. On the other hand, kids in higher-income homes generally have access to more advanced equipment and faster internet connections, which makes it easier to access and keeps kids interested all the time. Cultural norms surrounding technological adoption also shape behaviour. For example, some countries promote early digital literacy while others are more stringent. In situations where technology is seen as a necessary aspect of modern education and communication, kids get more positive feedback for using screens, even if they use them too much. Technological factors focus on the design of visual media platforms. Autoplay, limitless scrolling, push notifications, tailored content algorithms, and gamification all make experiences that are hard for kids to stop. Bright colours, moving parts, quick changes, and interactive features grab attention and keep people interested.

Adding social features like commenting, sharing, and gaming together adds a relationship aspect that makes people more emotionally involved. Ads and rewards in apps amplify psychological stimulation. These factors work together to create a loop in which kids keep looking for digital pleasure more often and for longer periods of time, which strengthens addictive tendencies. There is a lot of evidence that visual media addiction can lead to health and developmental problems [8]. Too much time spent on media has been linked to lower grades because it makes it harder to concentrate, shortens attention spans, and makes people put things off. Dependent children typically exhibit behavioural difficulties, such as irritability, hyperactivity, and difficulty controlling their emotions [9]. Using screens late at night, exposure to blue light, and an active brain before bed all make sleep worse. High-risk users often have problems with their health, such as not getting enough exercise, bad posture, being overweight, and straining their eyes. People who are addicted to visual media also have trouble with social situations, such as withdrawing from face-to-face contact, having less empathy, and having more conflicts in the family. There have been many studies that show a link between too much time spent on digital media and mental health problems like anxiety, despair,

loneliness, and poor emotional well-being. This is especially true for kids who use screens to feel better [11]. Studies show that intervention tactics need to consider both the environment and the person as a whole, from many angles. Parental mediation is widely recognised as an effective preventive strategy, particularly when parents use active engagement strategies, such as discussing online content, establishing explicit rules, and encouraging balanced routines. Teaching kids how to use technology in classrooms can help them learn how to think critically, be aware of addictive design features, and build good media habits [10].

Encouraging people to play sports, engage in creative activities, and spend time outside gives them real options that make them less dependent on digital entertainment. Psychological therapy designed to improve self-regulation, emotional resilience, and coping skills can also reduce the likelihood of addiction. Schools, health experts, parents, and lawmakers need to work together to deal with the growing problem effectively. The literature indicates that visual media addiction in school-aged children is a complex phenomenon influenced by a variety of interconnected factors, including individual characteristics, social dynamics, technical advancements, and environmental conditions. As digital ecosystems continue to evolve, it becomes harder and harder to track how much media kids use [12]. An ongoing study is essential to understanding emerging patterns, formulating evidence-based interventions, and fostering healthy childhood development in an increasingly media-saturated environment.

2.1. Need for the Study

A cross-sectional study was conducted to identify smartphone use patterns associated with problematic smartphone use (PSU) among preschool children in South Korea. A Sample size of 1378 preschool children was obtained from a nationwide survey on smartphone overdependence conducted in 2017 by the South Korean Ministry of Science and ICT and the National Information Society Agency. Results revealed that 17 % of the sample met the criteria for PSU. The odds of PSU were significantly higher among frequent smartphone users, particularly among children who used a smartphone for more than 2 hours per day. Using smartphones to watch TV shows or videos for entertainment or fun significantly increased the odds of PSU, whereas using smartphones for education, games, and social networking did not. The findings indicate that 1 in 5 preschool children who use smartphones may experience PSU. A descriptive study was conducted to assess levels of computer game addiction and loneliness among 4th-grade children at a primary school in 2017-2018. All 4th-grade students at the school were selected as the sample (205 students). Data were collected using three tools -Personal Information Form, Computer Game Addiction Scale, and UCLA Loneliness Scale. Descriptive and inferential statistics were used to analyse the data.

Results revealed that 50.7% of the students were female, and 39.0% had a sister/brother. Parents were mostly high school graduates (mothers: 31.7%; fathers: 34.1%). Around 34.6% of the students played the game for 30 min/day, 25.4% for 120 min/day, and 44.4% refused sleep to play games, while 58.5% became aggressive when their playtime was reduced or restrained. The study concluded that there is a significant relationship between students' computer game addiction and loneliness. As children and adolescents navigate the crucial years of social and emotional maturation, their neural pathways undergo rapid change. Notably, the pre-teen years are marked by a surge in the receptors for dopamine, the "feel-good" neurotransmitter, in a specific region of the brain known as the ventral striatum. This neurological shift makes pre-teens particularly vulnerable to the allure of social rewards, including the attention and approval of their peers, a dynamic that social media platforms have become skilled at exploiting. When children increasingly turn to digital devices for entertainment, connection, and validation, they become susceptible to the harmful effects of digital addiction. Various studies have linked excessive screen time to a lot of concerns, including diminished attention spans, impaired social skills, increased anxiety and depression, and even observable changes in brain structure and function.

2.1.1. Problem Statement

Prevalence and determinants of visual media addiction among school-aged children.

2.1.2. Objectives

The objectives of the study were to:

- To determine the level of visual media addiction among children.
- To find associations between visual media addiction and selected socio-demographic variables.

2.1.3. Hypotheses

To achieve the stated objectives, the hypothesis will be tested at a 0.05 level of significance:

- **H_1:** There will be a significant association between the prevalence of visual media addiction and selected demographic variables.

2.1.4. Assumptions

The study assumed that:

- Children have social media addiction ranging from mild to severe.
- Visual media addiction may affect children's academic performance.
- The visual media addiction disrupts the daily routine of children.
- Parents may be helpless to control the visual media addiction of their children.

3. Materials and Methods

3.1. Research Approach

A descriptive survey approach was used in the study to assess the prevalence of visual media addiction among children in a selected community.

3.2. Research Design

A descriptive cross-sectional design was used to assess the prevalence of visual media addiction among children in a selected community.

3.3. Setting of Study

The study was conducted in a selected community of Kannur district.

3.4. Variables

In this study, the prevalence of visual media addiction among children was the dependent variable. In contrast, extraneous variables included gender, age, religion, family type, parents' employment status, average monthly family income, area of residence, and number of children in the home.

3.5. Sample and Sampling Technique

The sample in this study consisted of 300 mothers of children aged 5 to 10 years, selected through convenience sampling, from a selected community, who met the inclusion criteria.

3.6. Inclusion Criteria

- Mothers who are willing to participate in the study.
- Mothers of children between the ages of 5 and 10 years.
- Mothers who are available during the data collection period.

3.7. Exclusion Criteria

- Mothers who are not willing to participate in the study.
- Mothers of children aged below 5 years and above 10 years.
- Mothers of children who were not available at the time of data collection.

3.8. Description of the Tool

3.8.1. Baseline Characteristics

The first part of the tool consisted of 8 items related to the baseline characteristics of the children that included gender, age of the child and mother, religion, type of family, education of mother, employment status of parents, average monthly family income, area of residence, and number of children at home.

3.8.2. Preliminary Assessment

The second part of the tool consisted of a preliminary assessment that included certain aspects of visual media addiction, like hours spent using visual media per day, type of visual media preferred by the child, ownership of a phone/tablet, field or aspect preferred by the child more, and daily data used by the child.

3.8.3. Rating Scale

The investigators prepared a 20-item rating scale. Each statement was given a score of 0, 1, 2, or 3, and the total score was 60.

4. Results

4.1. Description of Preliminary Assessment Details

A preliminary assessment found that around 49% of the children spent less than 1 hour per day on visual media, whereas 42.7% spent 1-3 hours per day. Very few proportions (7%) of the children spent 4-6 hours daily, and the percentage of children who spent more than 6 hours on visual media per day was only 1.3%. It was found that more than half (54%) of children used mobile phones, while 43% used television. Only 2% of the children used a laptop or computer, and the rest (1%) used other types of visual media (Figure 1).

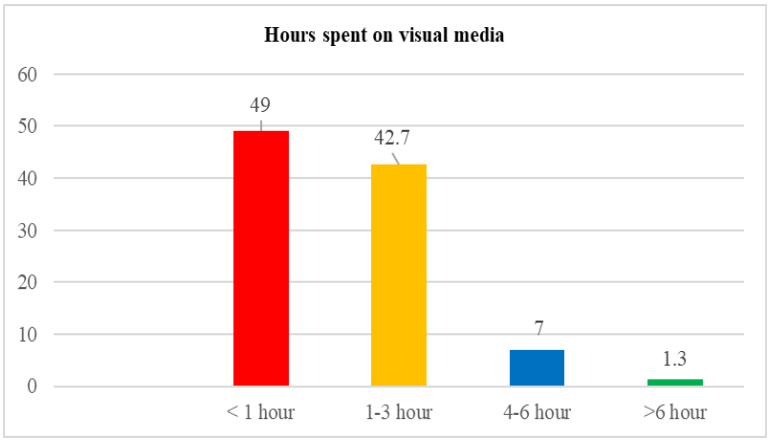

Figure 1: Distribution of samples based on hours spent on visual media

Regarding ownership of a device, most (92%) of the children did not own a device, whereas 8% of them owned one. It was revealed that around 45% of the children preferred cartoons, 37% preferred YouTube videos, 15% preferred games, and 3% preferred other content.

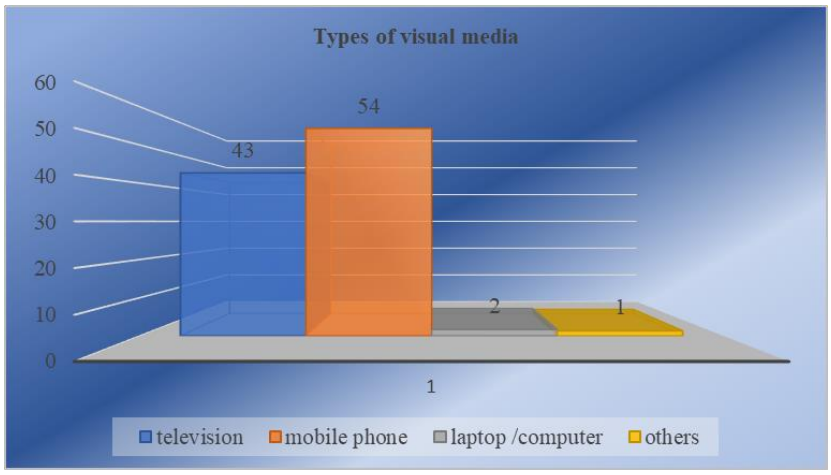

Figure 2: Distribution of samples based on types of visual media used

Data in Figure 2 shows that more than half (54%) of children used mobile phones, whereas 43% used television. Only 2% of the children used a laptop or computer, and the rest (1%) used other types of visual media.

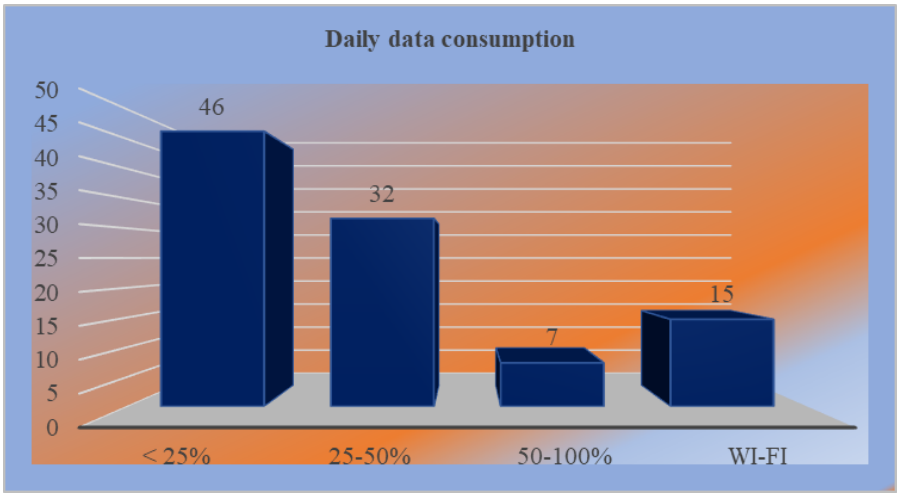

Figure 3: Distribution of samples based on daily data consumption

The data in Figure 3 shows that 46% of the children had less than 25% data consumption, whereas 32% consumed between 25% and 50%. Around 7% of children used to consume 50-100% of their data daily, and 15% used Wi-Fi.

Table 1: Description of the severity of visual media addiction among children

Grading	Range	Severity of Visual Media Addiction	
		Frequency	Percentage
Mild	0–20	236	78.67
Moderate	21–40	56	18.67
Severe	41–60	08	2.66
n=300			

The data in Table 1 above depict the severity of visual media addiction among children. Most (78.67%) of the children had mild addiction, and 18.67% had moderate addiction, while 2.66% had severe addiction to visual media (Figure 4).

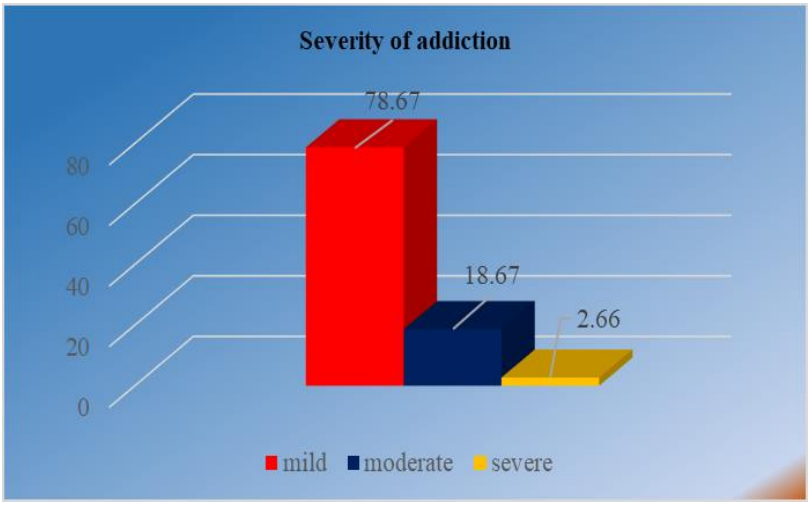

Figure 4: A bar diagram shows the severity of addiction among school-aged children

The data presented in Table 2 below indicate that the range of visual media addiction scores was 0-58. It also shows that the mean, median, and standard deviation of visual media addiction among children were 13.48, 11, and 10.72, respectively.

Table 2: Range, mean, median, and standard deviation of visual media addiction among children

Variables	Range	Mean	Median	Sd
Visual media addiction	0-58	13.48	11	10.72
n=300, Maximum score - 60				

Association between severity of visual media addiction and selected demographic variables:

- **H_{02}:** There will be no significant association between the severity of visual media addiction and selected demographic variables.

Table 3: Association between severity of visual media addiction and selected demographic variables

No.	Variables	^{P} value	Inference
1	Gender	0.474	Not significant
2	Age of the child	0.608	Not significant
3	Age of mother	0.108	Not Significant
4	Religion	0.022*	Significant
5	Type of family	0.060	Not significant
6	Education of the mother	0.596	Not significant
7	Employment status of parents	0.018*	Significant
8	Monthly family income	0.290	Not Significant
9	Area of residence	0.628	Not Significant
10	Number of children in family	0.955	Not Significant
*n=300, P<0.05 *significant*			

The data in Table 3 above revealed that there was a significant association between the severity of visual media addiction and demographic variables like religion and the employment status of parents. And there was no significant association between variables such as gender, age of the child and mother, type of family, mother's education status, average monthly family income, area of residence, and number of children in the family; hence, the test was statistically significant at the $p<0.05$ level. The null hypothesis was rejected, and the research hypothesis was accepted.

5. Discussion

The study findings were similar to those of a cross-sectional, questionnaire-based study conducted to identify exposure to and time spent with various audio-visual media devices among children in Delhi, India, from August 2016 to July 2017. The sample included 354 children (56.5% boys and 43.5% girls) aged 6 months to 12 years who attended a tertiary care hospital in New Delhi. Data were collected using a questionnaire adopted from Zero to Eight Common Sense Media 2013 nationwide survey (USA). The results showed that all the children had access to mobile devices; 75% had smartphones, and 25% had ordinary mobile phones. Around 93.5% had access to television, and 14.4% had access to computers. For television, the average daily screen time was >2 h in 38.4% of children. It was significantly higher in the 2–8-year age group, in females, and in urban areas ($p<0.05$). For mobile phones, the highest exposure was observed in the 5–8-year age group, with 19% of children reporting screen time >2 h/day.

The study concluded that our children have daily screen time exceeding 2 hours, underscoring the need for specific guidelines for optimal media use by children, especially in developing countries like India. The study's results helped the researchers derive several implications for the nursing profession. Nursing professionals can initiate awareness sessions at the school and college levels to help parents and teachers develop more effective strategies to manage children's time, thereby significantly reducing screen time. Parents must be given more sessions to help them engage children at home in healthy ways and reduce their screen time. The authorities can implement additional activity areas, such as parks and play facilities for children, at schools and in public areas at an affordable rate. Research can be undertaken to make people aware of the ill effects of media addiction among children.

6. Conclusion

Kids and teens today are growing up in a world where digital technology is a big part of their everyday lives, schoolwork, and fun. They are exposed to smartphones, tablets, computers, televisions, and gaming consoles at a young age, which naturally increases their overall screen time. As these devices become more common and easier to use, kids spend a lot of time looking

at digital screens for school, talking to friends, and having fun. Studies from multiple nations demonstrate that excessive screen use correlates with numerous physiological and behavioural problems that can affect both short- and long-term well-being. One of the most common effects is the rise of cardiometabolic risks like obesity and high blood pressure that come from not being active and sitting too much. Long periods of screen time can also make it hard to sleep, as they disrupt natural sleep cycles by exposing you to blue light and overstimulating you before bed. Also, kids who spend a lot of time on screens typically say they have chronic neck and back pain because they sit for lengthy periods of time with bad posture. Excessive screen time has also been linked to mental health problems like sadness, anxiety, irritability, and emotional instability. These consequences are frequently exacerbated by diminished social interaction, restricted outdoor play, and fewer opportunities for real-world participation. Many studies have also found that children who spend a lot of time in front of screens do worse in school because excessive screen time impairs their ability to concentrate, learn, and study. In general, the increased reliance on digital devices underscores the importance of balanced screen time rules, healthy habits, and parental involvement to protect the physical, emotional, and mental development of young users.

Acknowledgement: The authors sincerely thank Lourde College of Nursing and the University of Bahrain for their valuable academic support and institutional facilities provided throughout this study.

Data Availability Statement: The data for this study are available upon request from the corresponding author.

Funding Statement: Self-funded project within the Institution.

Conflicts of Interest Statement: The authors declare no conflicts of interest.

Ethics and Consent Statement: Ethical clearance for this study was obtained from the Institutional Ethical Committee (IEC) of Lourde College of Nursing.

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