Online Media & Society
Vol.6, No.3 (September, 2025), Pp.33-48
ISSN(online): 2790-1882, ISSN(print):2790-1874
DOI: https://doi.org/10.71016/oms/1h9vmg53

Original Article **https://hnpublisher.com**

The Impact of Digital Media (Binge-Watching) Practices on Vision and Neurological Well-Being

Anila Imran[1], Nazia Rehman[2]

[1]MPhil Scholar, Department of Media and Communication Studies, Rawalpindi Women University, Pakistan.
[2]Lecturer, Department of Media and Communication Studies, Rawalpindi Women University, Pakistan.
Correspondence: manosonly@gmail.com[1]

ABSTRACT

Aim of the Study: This study aims at exploring the potential effects on vision and neurological well-being. In terms of vision the prolonged screen exposure may affect digital eye strain, blurred vision, dryness, tear vision stability, blue light exposure, myopia, reduced blink rate, accommodative response etc. In addition to vision, potential damages to neurological well-being are more far reaching which include effects on cognitive skills, sensory processing, physical and mental health issues including emotion/ mood and neuro-transmitter activity.

Methodology: Quantitative data analysis was used in which a deliberate and all-encompassing questionnaire was formulated and uploaded on Google survey. Sample comprises of 207 participants from university students using non-probability (convenient sampling). The questionnaire covered screen use of digital media and binge-watching practices and their effects on Vision and Neurological Well-Being. Survey comprised of 15 questions linked to the phenomenon, its effects and cognizance level of the society.

Findings: Study established that people remain inseparably involved with screens due to multiple reasons (official, entertainment and social interaction) and utilize multiple platforms for the purposes. Majority of the participants revealed that prolonged screen exposure has created negative effects on their vision and neurological well-being, however, a certain degree of non-acceptance is visible due to increased dependency and the charm/ fascination.

Conclusion: Research highlights the requirement of accepting the fact that screens are integral part of our lives and they come as a package with certain advantages and disadvantages. What is important, that we become the responsible users to accrue maximum dividends from these platforms? We must identify and more importantly accept the risks so that an institutionalized mechanism is orchestrated to address these issues in an amicable manner.

Keywords: Binge-Watching, Digital Media Consumption, Vision, Neurological Well-Being, Neuro Transmitter Activity.

Article History

Received:
May 20, 2025

Revised:
July 25, 2025

Accepted:
August 03, 2025

Online:
August 12, 2025

1. INTRODUCTION

Today's digital age has ushered in its own complexities and ailments, binge-watching practices being one of them (George, Baskar, et al., 2023). Digitization phenomenon has introduced humans to another level; wherein they have been inextricably attached to screens like screens are their placenta (Descourouez, 2024). May it be in the name of studies, research, education, entertainment or time pass, all and sundry are attached to it. With the passage of time, a habit has been created, wherein, rather than watching one episode, people continue sitting and complete the season in one go or from work they shift to entertainment or social interaction. This habit is known as 'Binge-Watching' screen time and causes prolonged screen exposure. This prolonged exposure is causing physical and mental ailments specifically on vision (Shah, Natarajan, et al., 2025) and over-all neurological well-being (Ansari, Memon, et al., 2024, Zhao, Potenza, et al., 2023 & Descourouez, 2024). While studies have made the world embrace effects; however, most of the research work revolves around studying the behavioral patterns of children and teenagers. This study aims to analyze the impacts of binge-watching contact on the working professional (students, researchers, professionals) thus providing an insight into relatively untouched domain (considered obvious/ normal) and suggest strategies for a smarter digital usage by professionals (Khan et al., 2018; Safdar, 2021; Shabir et al., 2014).

1.1 Context

If we analyze carefully, we see more children and teenagers with glasses as compared to elders or what we use to observe two decades ago. What can be the reason? The only reason that apparently comes to mind is the excessive screen exposure which causes digital eye strain (Shah, Natarajan, et al., 2025). Digital eye strain symptoms include blurred vision, eye dryness, watery eyes and burning sensations (Sheppard and Wolffsohn, 2018). Moreover, blue light exposure interrupts and disrupts the natural sleep cycle, thus increasing likelihood of Myopia (Lanca and Saw, 2020). Additionally, neurological well-being of individuals is at risk due to prolonged screen time and may become a source of neurological disorders/ ailments including concentration, auditory processing, cognitive skills, memory and decision making. As per one of the studies, once the brain remains overstimulated due to excessive screen exposure it is hard for the brain to assimilate and process real-life information (Lissak, 2018). Due to poor sleep mental health worsens and may even lead to conditions like anxiety, depression and hypertension (Exelmans and Van den Bulck, 2017; Qureshi, 2024; Safdar and Waseem, 2025).

1.2 Background

Though it has been established that binge-watching screen time affects both vision and neurological health, however, we cannot turn back to stone age and stop the usage of screens. We have to live in today's era of science of technology and extract the benefits of technology, while saving ourselves from the adverse effects. Therefore, it is important to research and work out what can be the ideal time and methods to accrue the benefits. According to The Media Dependency Theory (Ball-Rokeach & DeFleur, 1976) provides a strong theoretical foundation for studying the impact of binge-watching of screen time on vision and neurological well-being.

2. LITERATURE REVIEW

Ilyas and Maqsood (2023) in their article 'Binge-watching as behavorial addiction: A systematic review' systematically reviewed psychological and cognitive impacts of binge-watching. Authors employed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Study has revealed significant association between binge-watching and psychological issues like mood disturbances, emotional issues and compromised functioning etc. Research concluded that binge-watching causes behavioral addiction leading to negative psychological and cognitive outcomes thus requiring development of interventions.

Sindhwani et al., (2022) in their article 'Binge watching and its effects on ocular health among young adults' is aimed at evaluating the impact of binge-watching on the ocular health of young adults.

Researchers used a questionnaire attempted by 492 participants, aged 18-26 who completed it online. They also underwent ocular examinations including Schirmer's and TBUT tests. Findings revealed that more than half of the strength engaged in binge-watching, which was significantly associated with eye discomfort, dry eyes, blurred vision, sleep disturbances and neck pain. Research confirmed that excessive screen time adversely affects ocular surface health. Study concludes by highlighting the need for awareness and preventive strategies for mitigating the ocular risks.

Ansari et al., (2024) in their article 'Exploring the physiological impact of Excessive screen time on the mental health of Youth of Hydrabad, Sindh' investigated the link between anxiety and depression among young adults. It was a survey-based study, involving 550 participant students of Jamshoro University between 15 - 19 years of age. A significant association between prolonged screen exposure, particularly at night and increased levels of anxiety and depression as measured by the DASS-21 questionnaire was established during the study. It was concluded that there is a link between excessive screen exposure and anxiety and depression among students.

Liu, et.al, (2021) in their research "Adolescent Vision Health During the Outbreak of COVID-19: Association Between Digital Screen Use and Myopia Progression" talk about how continuous use of digital screens during lockdown implemented in COVID-19 affected the visual health of adolescents and how Myopia increased during that time. The study included an online survey to assess the issues, utilizing Teachers Daily Forum. Response was solicited from 29 provinces and autonomous regions. Study found that there was a sharp increase in the use of digital devices during COVID, Myopic conditions have increased for upper and lower secondary school grades, linkage has been established between duration of screen engagement and higher risk of Myopia. Moreover, more chances of Myopic progression is in cell phone users and computer use in comparison to TV. The study concluded that use of cell phones and computers need to be regulated and decreased.

Hipolito and Coelho (2023) in their article 'Blue Light and Eye Damage: A review on the Impact of Digital Device Emissions" reviewed the effects of blue light emitted by digital devices on eye health. Authors analyzed the recent studies on the subject. Study found that blue light exposure can lead to oxidative stress, contributing to digital eye strain. As the Blue Light esposes us to potential risks, there is a need to adapt protective strategies like filters, screen, time management, and regular eye check-ups.

Shah, et al., (2025) in their article 'Excessive screen time exposure leads to dry eyes and inflammatory conjunctivitis in children' is aimed at finding association between long screen time which can cause dry eyes and inflammatory conjunctivitis in children aged 3 to 11 years. A cross-sectional study was conducted in a Islamabad Hospital using Multivariate analysis. It was found that lengthy screen time can cause lower blink rate, dry eyes and inflammatory conjunctivitis. The research concluded that lengthy screen time can lead to multiple problems, many of which we are not aware off. That is why there is a need to understand this phenomenon and affect measures that can save us from these problems.

Mohamed, et al., (2025) in their article 'Prolonged screen time is associated with increased severity of tic symptoms in children with tic disorders' investigated the relationship between prolonged screen time and tic severity in children with tic disorders. Researchers conducted a cross-sectional study involving 306 children with tic symptoms and screen time exposure using parent reported questionnaires. It was found in the study that children with longer screen time exhibited more significant tic symptoms. The association remained even after adjusting for various factors. The study concluded that excessive screen time may exacerbate tic symptoms in children with tic disorders, highlighting the importance of monitoring and managing digital exposure.

Ilyas and Qureshi (2020) investigated the relationship between binge-watching and cognitive functioning among university students in Lahore. Conducted from January to November 2019, subject research incorporated 376 students selected through purposive sampling. Results indicated a significant negative correlation between frequency of binge-watching and various executive functions, including response inhibition, working memory, emotional control and time management. Research concluded that reduced

cognitive functions can be attributed to binge-watching, thus highlighting the need for enhanced awareness.

Jain, et al., (2025) explore the Impact of Screen time on auditory Processing and working memory in tweens (pre-adolescents). Experimental method on fifty-seven tweens was applied. Comprehensive tests for hearing, speech language and IQ Skills were explored. The result was supported by Goldilocks Hypothesis too much screen time can have negative consequences. Finding of the study was that moderate screen time (1-2 hours) helps teen in improving their auditory processing and memory skills, however, excessive screen time creates multiple physical and neurological issues. These findings support the Goldilocks Hypothesis; thus, requirement of balanced screen use is enhanced. The research concluded that moderate screen time is essential to promote and boost memory and auditory processing, however, excessive screen time negatively affects cognitive functions, thus warranting a balanced approach for healthy physical and neurological development.

Wango and John (2024) in their article 'Screen Time in Early Childhood Interferes with Sensory Processing' examined the impact of screen exposure on sensory processing in young children. Authors reviewed existing literature and studies. Study found that children exposed to screens at 12 months of age are twice likely in high-risk for low information processing. It was established that early childhood use of digital screens may interfere with sensory processing, potentially leading to developmental challenges.

Association between screen time, emotional and behavioural problems among children and adolescents in US by Yu, et al., (2025) examined the association between screen time with mental health in children and adolescents. Qualitative method was used based on a questionnaire filled by 4932 children and adolescents. It was found that children were suffering from emotional problems, personal relationship and difficulties in managing routine affairs. It was established during the study that wise/ detailed guidance for using electronic gadgets must be given.

Research by Zhao, et al., (2023) probes connection between excessive screen Media Activity and mental health problems in youth. Researchers conducted a research to explore if long time screen exposure can lead to mental issues in children. Method was experimental study on 5, 100 participants (A B C D) study Adolescent Brain Cognitive Development. It was found that excessive screen expositive leads to anxiety and depression. It was concluded that excessive screen exposure is a problem which needs to be handled tactfully and there should be an institutionalized mechanism to bring a clear understanding and positive change.

George, et al., (2023) in their research article 'Screens steal time: How excessive screen use impacts the lives of young people' explored impacts on health, relationships, productivity and development, in relation to excessive screen exposure. Researchers undertook a mixed study i.e. quantitative as well as quantitative by using both surveys as well as interviews. Data was collected by CDC and NIH research survey of youth from ages of 12 to 19 years. Finding revealed a positive relation between prolonged screen exposure and dismal academic performance, sleep/ emotion/ mood disorders as well as disturbed social relationships. Study also established that with more screen time you become increasingly prone to obesity, anxiety, social phobia, depression and aggression. Research concluded that screen usage significantly disrupts multiple dimensions of social life especially in youth. It was established that there is a requirement for more awareness programs and formal digital education so as to achieve balanced lives.

Descourouez (2024) in their research 'What Excessive screen time does to the adult brain' undertook research on how binge- watching screen time can affect the functioning of adults, especially cognitive skills and neurological effects. The research quotes many scientive studies to support her finding, examining the relationship between screen time and brain health in adults. Excessive or long-time screen exposure has adverse effects on memory retention and sleep patterns in adult affecting their day to day like and works. It was established during the study that prolonged screen exposure in adults' causes thinning of cerebral cortex, causes reduction in grey matter, disrupts the sleep patterns due to melatonin release issues and also may become a source of grave dangers like dementia, stroke, Parkinson's disease

etc. It was concluded at the end of study that there is a need to moderate screen usage so as to maintain cognitive health and minimize/ prevent potential neurological damages.

Gao & Gao (2024) in their study 'A meta-analysis of prospective cohort studies on screen time and the risk of depression in adolescents' explored how increased screen time is associated with the risk of depression and mental health. Researchers undertook a meta-analysis of nine prospective cohort studies, encompassing 41, 194 participants. They employed a random-effect model to calculate pooled odd ratios (ORs) and assessed heterogeneity using the I2 statistics. It was found that higher the screen time, more are the chances of developing depression. Notably, adolescents with more than 2 hours of daily screen time have shown a higher risk, compared with those having lesser screen exposure. It was concluded that excessive screen time increases the chances of depression among adolescents. This study underscores the importance of adhering to screen time guidelines, so that the potential hazards to mental health risks are mitigated.

In their article on 'Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management Cures' Mupalla, et al., (2023) explored the effects of long hours of screen exposure that an affect the children negatively. These negative effects include cognitive, linguistic, social, emotional as well development effects. Mining method was employed by the researchers to collect and analyze data. They undertook a detailed literature review, analyzed studies which examined the effects of screen time on children. The Study found that excessive and binge-watching screen time can effect on social and emotional growth, including rise in obesity study, disorders and mental health. It could bring to fore drastic outcomes including impaired language development, reduced attention span, behavioral and socio-emotional issues. Research concluded that there was a strong need for parental guidance, screen time limits, promoting and undertaking healthy activities and also promoting co-viewing so as to limit the full concentrated screen time.

Salaschek & Bonfadelli (2020) in their article talk about how people now use the internet and social media to learn about health. In the past, only doctors and health practitioners gave health advice. Now anyone can share health tips online. Researchers analyzed the existing literature on digital health communication while emphasizing on the user's experience or their perception on quality as well as credibility of online health information. They wanted to understand how people find health information online. Research found that many people use internet to search for health problems and treatments. Not at all health information online is true or of good quality. People trust health information more, if it looks good, like videos or nice pictures and comes from someone they believe, like a doctor or a popular person online. Emotional stories or easy words also make people trust the information more. This shows a transition from one-way communication to interactive exchange using the social media platform. Research concluded that today more and more people are learning about health online. That's why it is important to make sure the information they find is true and safe. People also need to learn how to tell or differentiate good information from bad health information. Moreover, effective communication requires not only accurate information but also attention to how users perceive and interact with that information. Enhancing digital literacy and ensuring the credibility of online health resources are crucial for improving public health outcomes.

2.1 Study Objective

To explore the impact of binge-watching screen exposure on 1) vision and 2) neurological well-being.

2.2 Problem Statement

Screen usage has become an intrinsic part of our daily life, may it be work study, research or entertainment. With the rapid proliferation of digital media and the rise of binge-watching behaviors, individuals are increasingly exposed to prolonged screen time and thereby its adverse effects. Though you cannot and should not say no to new technology as it comes with plenty of benefits, yet its excessive and continuous usage can become a source of physical and mental ailments. Evidence suggests a correlation

between excessive digital media consumption and physical effects, like stress on the vision, whereas, in mental ailments it can affects cognitive skills, memory and neurological functioning. It also ignites sleep, mood and emotional disorders. These places in forefront the requirement of developing crystal understanding of this digital phenomenon and affect measures which can help us improve our lives. Despite these risks, public awareness and scholarly focus on the long-term implications on vision and neurological well-being remain limited. A number of studies cover these aspects, however, as single entity and mostly for children. This study will explore impacts of binge-watching screen time on the professionals (students, researchers, professionals) thus providing an insight into relatively untouched domain.

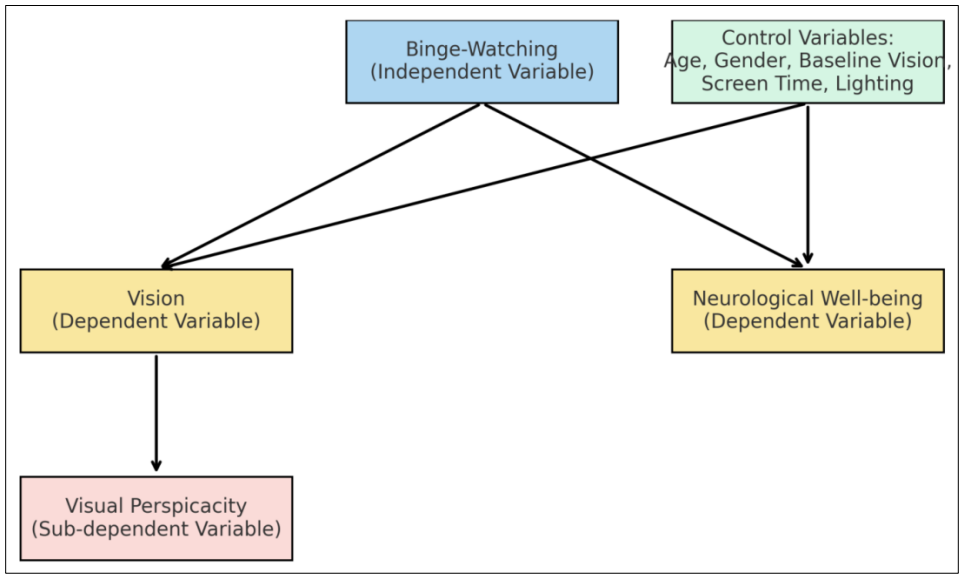
2.3 Rationale of the Research

Screen usage has become an intrinsic part of our daily life. May it be work, study, research, or entertainment? Though you cannot and should not say no to new technology as it comes with plenty of benefits, yet its excessive and continuous usage can become a source of physical and mental ailments. In terms of physical effects it stresses the vision, muscles and nerves, whereas, in mental ailments it can ignite sleep/ mood/ emotional disorders. This places in forefront the requirement of developing crystal understanding of the digital phenomenon. This research will be a true contributor in creating this crystal clarity through identification of these ailments and giving necessary input on digital well-being which may in turn improve physical and mental being.

2.4 Theoretical Framework

According to The Media Dependency Theory (Ball-Rokeach & DeFleur, 1976) provides a strong theoretical foundation for studying the impact of binge-watching of screen time on vision and neurological well-being. This theory explains how individuals increasingly rely on media to fulfill their informational, emotional and entertainment needs. In the context of binge-watching, this dependency often leads to screen exposure, resulting in physical and neurological consequences. When individuals become dependent on digital media, especially streaming platforms, they are more likely to engage in prolonged viewing sessions. This behavior contributes to digital eye strain, wrong posture leading to vertebral/ nerve issues. Neurologically this dependency causes memory, cognitive skills and audio processing issues as well as mood/ sleep and emotional distress. This theory helps in explaining not just the behavior but most importantly the potential impact of over-reliance and spending excessive time on screens.

Study Model



2.5 Research Gap

A number of researches have been undertaken on the subject, however, either they are more generic with generic conclusions or they have separately explored the issues of vision and neurological disorders. Moreover, a lot of studies have been undertaken on children (tweens and teens) but very less on professionals which are inextricably entrenched in this phenomenon and most often ignored. This research will aim to fill this gap by combining both physical (vision) and neurological factors. By the end of research, we will be able to understand and make smarter choices, best suitable for our health.

2.6 Scope of the Study

Research study explores the causal relationship between the Screen Time (Independent Variable) and Vision as well Neurological Well Being (Dependent Variable). Research aims at highlighting the effects of prolonged screen exposure on physical and neurological well-being of the professionals. Research study carries more significance as youth's dependency on digital world/ screens is increasing on daily basis; wherein, almost 70% of the youth is invariably dependent on the screens.

3. METHODOLOGY

3.1 Research Design

The present study adopted a quantitative research design to examine the relationship between digital media consumption, particularly binge-watching practices, and their impact on vision and neurological well-being. This approach was selected as it allows for the systematic collection and statistical analysis of numerical data, enabling objective evaluation of hypothesized relationships among variables. By employing structured survey instruments and standardized measurement scales, the design facilitated the generation of reliable, comparable results across respondents. The cross-sectional nature of the research further enabled the capture of diverse perspectives within a single time frame, providing a comprehensive snapshot of the phenomenon under investigation.

3.2 Population and Sample

The target population for this study comprised university students representing both male and female respondents from diverse academic backgrounds. The focus included students enrolled in undergraduate (BS), postgraduate (MPhil), and doctoral (PhD) programs across various faculties, namely sciences, social sciences, arts and humanities, and other disciplines. A total of 207 participants were selected as the study sample, ensuring adequate representation of different educational levels and fields of study. This composition provided a balanced mix of perspectives, enabling the analysis to reflect variations in experiences and perceptions. The heterogeneity of the sample enhanced the generalizability of findings within the context of higher education.

3.3 Data Collection Method

Data were collected using a non-probability convenience sampling approach, given its practicality in reaching the intended participants within a limited timeframe. A structured questionnaire was designed, consisting of four segments: (1) demographic information, (2) binge-watching habits, (3) impact on vision, and (4) neurological well-being. The instrument was developed using Google Forms to facilitate online distribution and ease of response. The survey link was shared in university class groups through the assistance of class representatives (CRs), ensuring access to students across multiple faculties. Over the course of one month, a total of 207 valid responses were received, providing sufficient data for statistical analysis.

3.4 Measurement of Variables

3.4.1 Independent Variable

Binge-Watching (Screen time used on digital media)

3.4.2 Dependent Variable

Vision (Visual Perspicacity, Blue Light Exposure, Eye Health Issues (Myopia, peripheral vision reduction, eye dryness/ tear vision stability, blink rate and accommodative response).

Neurological Well-Being (Cognitive Skills, Sensory Processing, Sleep Quality/ Emotion/ Mood Order, Physical and Mental Health)

3.5 Operational Definitions

Binge-Watching Screen Time: refers to prolonged and often compulsive consumption of digital content over an extended period of time (Conceptual Definition); Flayelle, Maurage, et., al (2020). In subject research term has a directly proportional relationship with the vision and neurological well-being.

Vision: refers to the sensory ability to perceive, interpret, and respond to visual stimuli through the eyes and brain; Goldstein, E. B. (2019). Sensation and perception (10^{th} ed.). Cengage Learning (Conceptual Definition). In this study vision is one of the key elements affected by Binge-Watching Screen Time.

Neurological Well-Being: refers to optimal functioning of the nervous system (Conceptual Definition); Kolappa, Henderson, et al. (2013). Study highlights binge-watching adversely affecting the neurological well-being.

Blue Light Exposure: refers to the contact of eyes with high-energy visible blue wave lengths of light (Conceptual Definition); Tosini, Ferguson, et al. (2016). Blue light exposure affects the vision due to binge-watching screen time.

Myopia: or nearsightedness is a common refractive error in which distant objects appear blurry while close objects can be seen clearly. It occurs when the eyeball is too long or the cornea is too curved, causing light rays to focus in front of retina; American Optometric Association. (n.d.). Myopia (nearsightedness); Myopia is on increase due to binge-watching and excessive use of digital screens.

Cognitive Skills: are the core set mental capabilities involved in acquiring knowledge and understanding through thought, experience, and the senses. These include processes such as attention, memory, reasoning, problem-solving, and language; Neisser, Boodoo, et., al (1996). Excessive screen use and binge-watching affect the cognitive skills negatively.

Sensory Processing: is the way our nervous system receives, organizes, and responds to sensory input from the environment and the body. It is an authorized and widely accepted term in various fields and became well-recognized through the work of Dr. A. Jean Ayres. Later on Lucy Jane Miller expanded the concept under the term sensory processing. You tend to slow down in sensory processing due to binge-watching habits and remaining stuck to screens.

3.6 Reliability of the Tools

Table 1: *Validity of the tools*

Sr.	Scale	Items	Cronbach_alpha
1	Binge Watching	5	0.88
2	Vision	5	0.89
3	Neurological well-being	5	0.87

The reliability of the measurement scales was assessed using Cronbach's alpha. The binge-watching scale demonstrated a high level of internal consistency, with a Cronbach's alpha value of 0.88. Similarly, the

scale measuring vision-related impacts yielded a reliability coefficient of 0.89, indicating strong consistency among its items. The neurological well-being scale also reflected high reliability, with a Cronbach's alpha of 0.87. These results suggest that all three instruments used in the study were internally consistent and suitable for further statistical analysis.

3.7 Data Analysis Techniques

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). Initially, frequency distributions and percentages were calculated to summarize the demographic characteristics of the respondents. Descriptive statistics, including means and standard deviations, were computed for the main study variables to provide an overview of the data trends. Pearson's correlation analysis was conducted to examine the strength and direction of relationships between variables. Furthermore, multiple regression analyses were performed to assess the predictive influence of binge-watching on vision and neurological well-being. These procedures enabled a comprehensive evaluation of the hypothesized relationships in the research model.

3.8 Ethical Considerations

Ethical protocols were observed throughout the research process to ensure the rights and privacy of participants. Informed consent was obtained from all respondents, with a clear explanation that the data collected would be used solely for academic research purposes. Participants were assured that their responses would remain confidential and would not be disclosed to any third party under any circumstances. To protect anonymity, no personal identifiers such as names were recorded or linked to the survey data. These measures were undertaken to maintain trust, safeguard participant privacy, and uphold the integrity of the research process.

4. RESULTS

Table 2: *Demographics of Respondents (N = 207)*

Sr.	Demographics	Responses	*f*	%
1	Gender	Female	108	52.2
		Male	99	47.8
2	Age Group	20–29	39	18.8
		30-39	81	39.1
		>=40	87	42.0
3	Education	BS	103	49.8
		MPhil	90	43.5
		PhD	14	6.7
4	Academic Discipline	Sciences	73	35.3
		Social Sciences	57	27.5
		Arts & Humanities	39	18.8
		Others	38	18.4

The survey comprised 207 participants, representing a balanced gender distribution, with women accounting for 52.2% (n = 108) and men comprising 47.8% (n = 99) of the sample. In terms of age, the study included individuals from diverse life stages, with 18.8% aged between 20 and 29 years, 39.1% falling within the 30–39 age bracket, and a substantial proportion of 42.0% aged 40 years or older. This spread reflects the inclusion of both younger adults and more experienced individuals, which enhances the range of perspectives captured.

Regarding educational attainment, nearly half of the respondents (49.8%) held a bachelor's degree, while 43.5% had completed an MPhil, and 6.7% possessed a doctoral qualification. Such a distribution suggests that the sample represents a highly educated segment of the population, likely equipped to critically assess the issues under study.

Academic background also varied, with 35.3% belonging to the sciences, 27.5% to the social sciences, 18.8% to arts and humanities, and 18.4% to other disciplines. This multidisciplinary representation contributes to a richer, more nuanced understanding of the research topic by incorporating insights from varied fields of expertise.

Table 3: *Descriptive Statistics*

Variables	Mean	Std	Min	Max	N
Binge Watching	2.89758	0.65146	1	5	207
Vision	2.95942	0.63053	1	5	207
Neurological well-being	2.72753	0.60320	1	5	207

Descriptive statistics were computed for the main study variables to provide an overview of the data distribution. The mean score for binge-watching was 2.90 (SD = 0.65), with values ranging from 1 to 5 across the 207 respondents. Vision-related impacts had a slightly higher mean of 2.96 (SD = 0.63), also within the 1–5 range. Neurological well-being recorded a mean score of 2.73 (SD = 0.60), indicating comparatively lower average responses than the other two variables. These descriptive values suggest moderate levels of binge-watching, perceived vision effects, and neurological well-being concerns among the sampled participants.

Table 4: *Correlations*

	1	2	3
Binge Watching	1		
Vision	0.382***	1	
Neurological well-being	0.304***	0.386***	1

***<.001

Pearson's correlation analysis was conducted to examine the relationships among the study variables. Binge-watching showed a significant positive correlation with vision-related impacts ($r = 0.382$, $p < .001$) and with neurological well-being ($r = 0.304$, $p < .001$). Similarly, vision-related impacts were positively and significantly associated with neurological well-being ($r = 0.386$, $p < .001$). These results indicate that higher levels of binge-watching are linked to greater reported effects on vision and neurological well-being, and that the two dependent variables are also meaningfully related to one another.

Table 5: *Multiple Regression Predicting Neurological Well-being*

Predictor	B	SE	t	p	95% CI (Lower)	95% CI (Upper)
Constant	1.137	0.297	3.828	.000*	0.551	1.723
Binge Watching	0.169	0.064	2.631	.009*	0.042	0.295
Vision	0.294	0.067	4.406	.000*	0.162	0.425
Gender	0.054	0.080	0.680	.498	–0.103	0.211
Age	0.004	0.005	0.795	.428	–0.006	0.014
Class	0.049	0.130	0.375	.708	–0.207	0.304
Academic Discipline	0.106	0.091	1.158	.248	–0.074	0.286

Model Statistics: $R^2 = 0.188$, Adjusted $R^2 = 0.164$, $F(6, 200) = 7.737$, $p < .001$
Note. SE = Standard Error; CI = Confidence Interval. $p < .05$ marked with *.

A multiple regression analysis was conducted to assess the predictors of neurological well-being. The model revealed that both binge-watching ($B = 0.169$, $p = .009$) and vision-related impacts ($B = 0.294$, $p < .001$) were significant positive predictors of neurological well-being. This suggests that higher binge-watching scores and greater reported vision effects are associated with higher levels of neurological well-being concerns. In contrast, gender, age, academic class, and academic discipline were not statistically

significant predictors ($p > .05$). The 95% confidence intervals for binge-watching (0.042, 0.295) and vision (0.162, 0.425) did not cross zero, further confirming their predictive strength.

Table 6: *Multiple Regressions Predicting Vision*

Predictor	B	SE	t	p	95% CI (Lower)	95% CI (Upper)
Constant	1.446	0.297	4.866	.000	0.860	2.031
Binge Watching	0.368	0.063	5.876	.000*	0.244	0.491
Gender	0.082	0.084	0.979	.329	–0.083	0.248
Age	0.010	0.005	1.831	.069	–0.001	0.020
Class	–0.107	0.137	–0.783	.435	–0.377	0.163
Academic Discipline	0.008	0.097	0.084	.933	–0.182	0.198

Model Statistics: $R^2 = 0.165$, Adjusted $R^2 = 0.145$, $F(5, 201) = 7.966$, $p < .001$
Note. SE = Standard Error; CI = Confidence Interval. $p < .05$ marked with *.

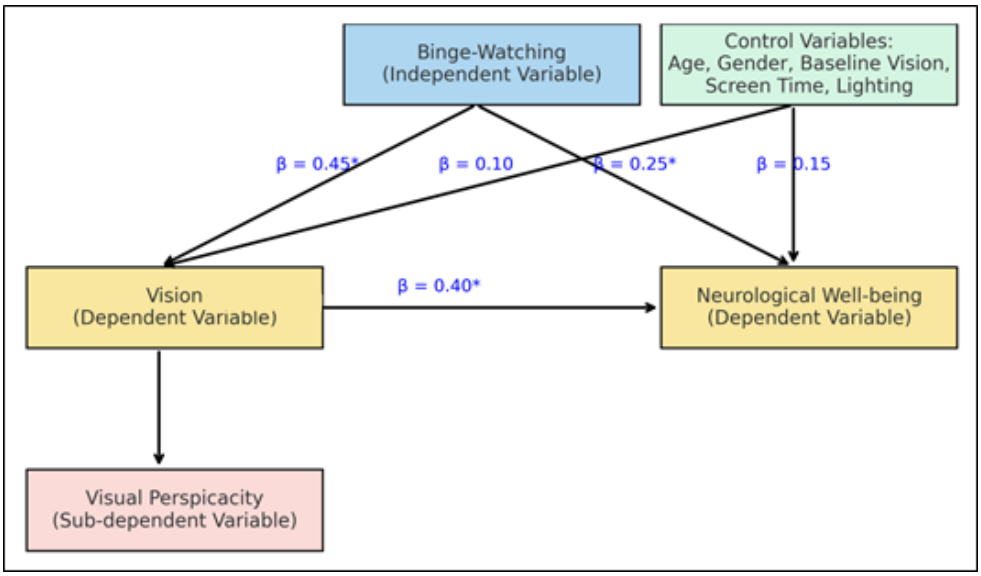
A multiple regression analysis was performed to examine the predictors of vision-related impacts. The results indicated that binge-watching was a significant positive predictor ($B = 0.368$, $p < .001$), suggesting that higher levels of binge-watching are associated with greater reported vision effects. Other variables, including gender, age, academic class, and academic discipline, were not statistically significant predictors ($p > .05$). Although age showed a marginal trend toward significance ($p = .069$), it did not meet the conventional threshold. The 95% confidence interval for binge-watching (0.244, 0.491) did not include zero, reinforcing its predictive influence in the model.

Table 7: *Path analysis*

Path	β	p-value	Significance
Binge watching → Vision	0.45	< .001	Significant
Vision → Neurological well-being	0.40	< .001	Significant
Binge watching → Neurological well-being (direct)	0.25	0.010	Significant
Controls → Vision	0.10	0.120	Not significant
Controls → Neurological well-being	0.15	0.080	Not significant

The structural equation modeling (SEM) results revealed several significant relationships among the study variables. Binge-watching had a strong positive effect on vision-related impacts ($\beta = 0.45$, $p < .001$), indicating that higher levels of binge-watching are associated with greater reported vision issues. Vision, in turn, significantly predicted neurological well-being ($\beta = 0.40$, $p < .001$), suggesting that vision-related problems contribute meaningfully to variations in neurological well-being. A direct positive relationship was also observed between binge-watching and neurological well-being ($\beta = 0.25$, $p = .010$), even after accounting for the mediating role of vision. Control variables (age, gender, academic class, and academic discipline) did not significantly predict either vision ($p = .120$) or neurological well-being ($p = .080$), indicating their limited influence within the proposed model.

Figure 2



5. DISCUSSION

Research has been partially successful in establishing the relationship between Binge-Watching Screen time (The Independent Variable) and Vision + Neurological Well-Being (The Dependent Variables). Prolonged screen composure is a reality and it happens due to multiple reasons, varying for age groups. If broadly seen, children mostly use it for entertainment; teenagers use it both for entertainment as well as studies. Once we enter the practical life and we become professionals, digital screens become a part and parcel of our lives. Professionals have prolonged screen exposure due to their official commitments (We proudly say paperless environment as we are saving the tress but actually on the cost of our health as most of professional work is undertaken utilizing multiple official platforms that include Microsoft word, power point, excel, zoom etc.). In addition, the professional has to maintain a social circle which links them to various platforms like Twitter, Instagram Facebook etc. After official commitments as well as maintaining social circle, they are left with less/ minimal time for entertainment purpose use of digital screens. Majority of the individuals feel that their visual perspicacity is affected by the prolonged screen exposure. At the same time digital eye strain is also felt by half of the strength surveyed. Same has also been established by different studies conducted on the subject. Blue light exposure is the aspect much ignored despite knowledge. Myopia or near sightedness could not be linked with the prolonged exposure, though, indirectly it is being caused more than past. Due to prolonged screen exposure eye dryness or tiredness is the most common cause. With regards to Neurological well-being visible effects have been observed in cognitive skills, sensory processing, physical and mental and health conditions. Once analyzed, sleep quality is most affected that triggers other physical and mental conditions.

Shah et al., (2025) in their study established that excessive screen time leads to multiple eye issues in children. Study was conducted in Islamabad Hospital and for children of lesser ages. As per the study a need has been to understand the prolonged screen view and its adverse effects. Jain et al., (2025) found that there is an enhanced requirement of having a balanced screen time. Study supported the requirement of having 1-2 hours screen time as it has a positive effect on the mental health, however, excessive screen time has negative effects on the physical as well as mental health. Ansari et al., (2024) have explored the physiological impacts of prolonged screen time in Youth of Hyderabad, Sindh who in their study established the link between prolonged screen exposure and emotional disorder. In another study association between screen time and mental health in children and adolescents was established by Yu et

al., (2025). As per Mohamed et al., (2025) in their article on 'Prolonged screen time is associated with increased severity of tic symptoms in children with tic disorders' concluded that excessive screen time can increase tic symptoms in children. Zhao et al., (2023) tested/ inquired about the connection between excessive screen media activity and mental health problems in youth. They concluded that there is a need to avoid excessive screen exposure. George et al., (2023) in their findings revealed a positive relation between prolonged screen exposure and physical/ mental disorders.

Research study has been conducted to establish the negative effects of binge-watching screen time which has been generally established, with minor issues which may need a better understanding as well as cognizance of the issue by the audience. Moreover, past studies analyzed give a hint that Pakistani society lags behind in their understanding of the digital phenomenon. This study is important as it highlights the aspects which are being ignored by us either due to lack of knowledge or we want to deny it. Research will allow the professionals to articulate their activities so as to minimize their exposure to digital screens or at least articulate in a way that constant stress is not involved. Policy makers will also be aided to make such policies which identify the professionals, researchers and students as one of the worst affected and make policies which aid them to live better and healthy lives. This study will aid future researchers to explore all fields independently and bring up more advanced conclusions and recommendations for betterment of the society.

6. CONCLUSION

In conclusion, the study set out to explore the growing entanglement between modern lifestyles and screen usage, especially in the context of what is now culturally accepted as 'Binge Watching' screen time. As out daily routines become increasingly intertwined with digital platforms, be it for work, communication or entertainment, what was once a convenience has gradually evolved into a dependency. The study concluded that screen dependency is not without consequence. The data points to a clear connection between extended screen exposure and a range of visuals and neurological issues. Participants frequently reported symptoms linked to digital eye strain, such a blurry vision, dry eyes and sleep disturbances, which are believed to be influenced by excessive blue light exposure. Beyond physical discomfort, concerns were raised regarding cognitive fatigue, fluctuating mood states and general sense of mental overload symptoms that suggest deeper neurological implications.

Yet, even with these observations, there remains a hesitance among many to fully acknowledge the potential risks. This reluctance seems to stem not from ignorance, but from the simple fact that screens have become indispensable. The study reveals a subtle tension: while the effects are felt and often recognized, they're also downplayed or accepted as part of the digital age's bargain. It is within this tension that the real issue lies. The challenge is not just to understand the impact of screen time, but to foster a culture that prioritizes digital well-being without compromising the benefits technology offers. Raising awareness, encouraging mindful usage and introducing healthier digital habits are no longer optional, they are necessary steps towards mitigating the silent toll that prolonged screen exposure is taking on both eyes and our minds.

6.1 Recommendations

- **Promote Scheduled Breaks with Intention:** Instead of loosely suggesting "take breaks", there should be structured awareness around the 20-20-20 rule, every 20 minutes, **o**k at something 20 feet away for 20 seconds. This simple practice, though often dismissed, can significantly reduce digital eye strain when consistently followed. Institutions and workplaces can build this into schedules subtly without hampering productivity.
- **Filter out Blue Light Burden:** While not everyone can afford advanced screen technology, the use of budget-friendly blue light filters or switching devices to night mode after sundown is a small but effective adjustment. Public awareness campaigns or even internal office workshops can push these changes without much resistance.

- **Encourage Device-Free Zones and Hours:** A practical way to cut down unnecessary screen time is to consciously create device-free zones at home, especially in bedrooms and dining spaces. Similarly, setting fixed non-screen hours (for e.g., during meals or early mornings) can help establish healthier boundaries.
- **Regular Eye Checks and Awareness Drives:** Screen related vision issues often go unnoticed until they become serious. Institutions should facilitate annual eye check-up camp for employees or students, while also circulating easy-to-digest educational content around symptoms of digital eye strain and preventive measures.
- **Mindful Content Consumption:** Rather than blindly binging, individuals should be nudged to practice mindful viewing, deciding in advance what to watch and for how long, instead of letting auto-play decide. Platforms can play a role too, by allowing settings that pause content after a certain duration or display well-being prompts.
- **Mental Health Integration in Screen Time Discussions:** Since screen exposure impacts not just the eyes but the brain as well, conversations around digital usage should integrate mental health perspectives. This can be through university wellness programs, HR modules, or even peer-led awareness groups.
- **Encourage Physical Movement in Parallel:** For every hour spent in front of a screen, five to ten minutes should be devoted to light physical movement. Be it stretching, walking or just standing up, this helps in maintaining neurological alertness and preventing cognitive fatigue.
- **Policy-Level Engagement:** Organizations and Institutions must take the lead in setting balanced digital norms rather than overloading individuals with extended online hours. Policy suggestions may include hybrid schedules, partial offline assignments, or mental health days to recharge.
- **Shift the Perception from "Normal" to "Not Ideal":** Most importantly, there needs to be a cultural shift in how binge-watching screen time is viewed, not as a harmless escape, but as a behavioral pattern that requires conscious moderation. Acceptance is the first step toward change, and that begins with honest, open conversations within communities.

Acknowledgements

None.

Conflict of Interest

Authors declared NO conflict of interest.

Funding Source

The authors received NO funding to conduct this study.

ORCID iDs

Anila Imran [1] https://orcid.org/0009-0005-3802-5187
Nazia Rehman [2] https://orcid.org/0000-0002-2817-7794

REFERENCES

Ansari, S., Memon. R., Uddin, S. F., Shah, H., Suhaq, A. H., & Mahnoor, S. (2024). Exploring the physiological impact of excessive screen time on the mental health of youth of Hyderabad, Sindh. *KJMS, 17*(4). https://doi.org/10.70520/kjms.v17i4.534

Descourouez, M. G. (2024). What excessive screen time does to the adult brain. Stanford Lifestyle Medicine. https://lifestylemedicine.stanford.edu/what-excessive-screen-time-does-to-the-adult-brain/

Gao, J., Gao, L. (2024). A meta -analysis of prospective cohort studies on screen time and the risk of depression in adolescents. *Acta Psychologica, 251*, 104530. https://doi.org/10.1016/j.actpsy.2024.104530

George, A. S., George, A. S. H., Baskar, T., & Shahul, A. (2023). Screens steal time: How excessive screen use impacts the lives of young people. *Partners Universal Innovative Research Publication, 1*(2), 157-177. https://doi.org/10.5281/zenodo.10250536

Hipolito and Coelho (2023). Blue Light and Eye Damage: A Review on the Impact of Digital Device Emissions. *Photonics. 10*(5), 560. https://10.3390/photonics10050560

Ilyas & Qureshi (2020). Relationship between binge watching and cognitive functioning among university students in Lahore, Pakistan. *Rawal Medical Journal, 45*(3), 702-706

Ilyas and Maqsood, et., al. (2023). Binge-watching as behavorial addiction: A systematic review. *Applied Psychology Review, 2*(2), 01-18. https://journals.umt.edu.pk/index.php/apr/article/view/5582

Jain, S., Trinesh, R., Vijayasarthy, S., Singh. S. S., Dang, A., & Jain, C. (2025). The effect of screen time on auditory processing and working memory skills in tweens (pre-adolescents). *The Egyptian Journal of Otolaryngology, 41*, Article 14.

Ji Liu, Baihuiye Li, et., al (2021). Adolescent Vision Health During the Outbreak of COVID-19: Association Between Digital Screen Use and Myopia Progression. *Font Pediatr. 9*, 662984. https://doi.10.3389/fped.2021.662984

Khan, A.W., Safdar, G., Ashraf, M. (2018). Effects of Mobile Phone Usage on Social Behaviours of University Students: A Case study of Islamia University of Bahawalpur, Pakistan. *Global Media Journal Pakistan Edition, 11*(1), 1-26.

Mohamed, Z., A., Dong, H., Xue, Y., Bai, M., Ouyang, Y., & Jia, F. (2025). Prolonged screen time is associated with increased severity of tic symptoms in children with tic disorders. *Italian Journal of Pediatrics, 51*(1), Article 16. https://doi.org/10.1186/s13052-025-01851-w

Mupalla, S. K., Vuppalapati, S., Reddy Pulliahgaru, A., & Sreenivasulu, H. (2023). Effects of excessive screen time on child development: An updated review and strategies for management. *Cureus, 15*(6), e40608. https://doi.org/10.7759/cureus.40608

Qureshi, A. A. (2024). Digital Well-being and Student Performance: The Effect of Screen Time, Social Media Usage on Students Performance mediated by Sleep Quality. *Human Nature Journal of Social Sciences*, *5*(4), 222-232. https://doi.org/10.71016/hnjss/hdp1jd98

Safdar, G. (2021). Formation of Global Village: Evolution of Digital Media-A Historical Perspective. *THE PROGRESS: A Journal of Multidisciplinary Studies, 2*, 17-26. https://doi.org/10.71016/tp/gneph711

Safdar, G., Waseem, K. (2025). Exploring Parents' Perception about Mobile Phone Usage among Underage Children. *Media and Communication Review, 5*(1), 173-197. https://doi.org/10.32350/mcr.51.09

Salaschek, M., & Bonfadelli, H. (2020). Digital health communication: Context and factors of influence. *Journal of Health Research and Public Health (Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz), 63*(2), 160-165. https://doi.org/10.1007/s00103-019-03086-7

Shabir, G., Hameed, Y.M.Y., Safdar, G., Gilani, S.M.F.S. (2014). Impact of Social Media on Youth: A Case Study of Bahawalpur City. *Asian Journal of Social Sciences and Humanities, 3*(4), 132-151.

Shah, M., Natarajan, S. B., & Ahmad, N. (2025). Excessive screen time exposure leads to dry eyes and inflammatory conjunctivitis in children. *Irish Journal of Medical Science, 194*(2), Article 26. https://doi.org/10.1007/s11845-025-03920-9

Sindhwani, Moudgil, et., al (2022). Binge watching and its effects on ocular health among young adults. Indian *Journal of Clinical and Experimental Ophthalmology*, *8*(2), 299-303. https://doi.org/10.18231/j.ijceo.2022.062

Wongo and John (2024). Screen time in early childhood interferes with sensory processing. *The Counselling Magazine, 4*(1), 16-18. Abailable at https://www.researchgate.net/publication/379890222_Screen_Time_in_Early_Childhood_interferes_with_Sensory_Processing

Yu, H., Xu, C., Lu, J., Qishanli, Li, Q., Zhou, K., Zhong, J., Liany, Y., & Yang, W. (2025). Association between screen time, emotional and behavioral problems among children and adolescents in the US: National Health Survey (NHIS), 2022. *Journal of Affective Disorders, 379*, 159-167. https://doi.org/10.1016/j.jad.2025.03.030

Zhao, Y., Potenza, M., & Paulus, M. (2023). Brain structural co-development is associated with internalizing symptoms two years later in the ABCD cohort. *Journal of Behavioral Addictions, 12*(1), 80-93. https://doi.org/10.1556/2006.2023.00006