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FROM PAPER TO SCREENS: POTENTIAL HEALTH ISSUES OF DIGITAL READING AMONG POST-GRADUATE STUDENTS OF CENTRAL UNIVERSITY OF PUNJAB

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ABSTRACT

The swift transition in technology changed students' reading habits, shifting from traditional print materials to digital formats such as e-books, e-journals, and other non-print materials. The present study investigates potential health issues associated with digital reading among postgraduate students at the Central University of Punjab. The study employs a descriptive survey design using a quantitative research approach. Using stratified random sampling, a sample of 300 students was selected. The findings of the study indicate a shift from paper to screens. Although the majority of respondents expressed neutral satisfaction with digital reading (35.7%), a significant percentage (35%) expressed positive satisfaction. However, even though digital reading offers greater accessibility and convenience, it also has negative impacts on respondents' health. About 50% of the respondents reported facing mild to severe health issues such as stress, eye strain, tiredness, headache, and back pain from digital reading. The study concludes that digital reading has emerged as a popular culture, but it still requires greater awareness of digital health literacy, balanced reading habits, and digital well-being.

Keywords: *Digital Reading, Digital Literacy, Health Literacy, Digital Well-being, Post-Graduate students*

1. INTRODUCTION

Reading is a cost-effective entertainment. It can help one broaden their horizons, and it is a great way to stay motivated. The history of reading can be traced back to the earliest scripts of the 4th millennium BC (Shimray et al., 2015). The invention of paper in China (around 105 AD) and the later printing press by Johannes Gutenberg in the 15th century marked turning points in reading history (Minguzzi, 2012). The Industrial Revolution and the rise of public education in the 18th and 19th centuries further encouraged mass reading habits with printed materials (Sanderson, 1972). Over the past few years, individuals across the globe have begun to read books, periodicals, and newspapers more on screens rather than on paper. More specifically, the use of digital devices as reading tools has gained importance in moving to paperless reading (Singer & Alexander, 2017). Globally, there is a growing trend of early exposure to digital devices among the younger generation (Liang & Zhang, 2025; Liu et al., 2025). According to the Kids & Family Reading Report – India Edition (Scholastic, 2018), in India, 24% of parents of children aged 6 to 17 prefer e-Books for their children. Digital publishing also gained popularity due to its lower production costs and demand. In the United States, about 30% of adults have read an e-book in the past year (Pew Research Centre, 2022). The international e-book market was approximately USD 18.2 billion in 2023 and is likely to reach nearly USD 30 billion by 2033 (Market.us, 2024). While there are undoubtedly numerous benefits to technology use for reading, there are also several hazards associated with prolonged digital reading (Devi & Singh, 2023). Online reading requires frequent eye movements and continuous screen-focused attention. It is both visually and physically fatiguing (Tseng, 2014). Prolonged use of digital devices for reading often results in symptoms such as blurred vision, eye irritation, headaches, and neck or shoulder pain. Digital reading, as well as online socialisation and entertainment, increased students' screen time. This higher screen time among youngsters and its effects on their health demand a systematic assessment.

2. LITERATURE REVIEW

Several studies have examined digital reading among various groups. Especially among students after the COVID-19 pandemic (Al-Maroof et al., 2021; Mizrachi & Salaz, 2022; Sun, Loh, & Nie, 2021; Sun, Loh, O'Brien, et al., 2021).

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Most of these studies examined the increased use of digital reading practices after COVID-19 and the adoption of different e-learning models among students. According to Melo et al. (2022), since 2019, Portuguese and Brazilians have mostly read on digital devices. In the Indian context, several studies have mainly examined the digital reading habits of different age groups (A. & Sinha, 2022; Ghosh, 2016; P. & Haneefa, 2018; Kuberkar & Das, 2020). Despite the growing popularity of digital reading, little research has examined its effects on students' health, particularly in the Indian higher education context. PG students, who spend significant time reading academic materials online, may face various health challenges, yet awareness and preventive practices remain inadequate. Hence, this study seeks to investigate the relationship between digital reading habits and associated health issues among PG students of the University of Punjab.

3. METHODOLOGY

The study employs a descriptive survey design using a quantitative research approach. The population of the study is students studying in the science departments of the Central University of Punjab. A sample of 300 students was selected using stratified random sampling to represent all the science departments. A well-structured questionnaire was used to collect data on digital reading habits, the accessibility of digital content, satisfaction with online reading, and health issues experienced from digital reading.

4. OBJECTIVES

a) To identify the important devices or apps used for digital reading.
b) To find out the accessibility of digital content.
c) To find out the level of satisfaction among postgraduate students with online reading.
d) To find out whether students face health issues from digital reading.

5. DATA ANALYSIS AND INTERPRETATION OF RESULTS

5.1 Demographic Profile

As shown in Table 5.1, the demographic profile indicates that 53% of participants were female and 47% were male. The majority of participants (67.3%) were aged 23-25 years, 28.3% were under 22 years, and only 4.3% were over 25 years.

Table 5.1: Demographic Profile

Variable	Category	Frequency	Percentage (%)
Gender	Female	159	53
	Male	141	47
Age Group	Below 22 years	85	28.3
	23–25 years	202	67.4
	Above 25 years	13	4.3

5.2 The Devices Used for Digital Reading

As shown in Table 5.2 and Figure 5.2, smartphones (44.80%) and laptops (42.10%) are the most used devices for digital reading, followed by Personal Computers (6.80%) and Tablets (5.80%). This result shows that portability and convenience are key factors influencing students' device choice for reading digitally.

Table 5.2: The Devices Used for Digital Reading

Device	Frequency	Percentage (%)
Mobile phone	240	44.80%
Laptop	226	42.10%
PC	36	6.80%
Tablet	31	5.80%
Kindle	2	0.30%
Others	1	0.20%

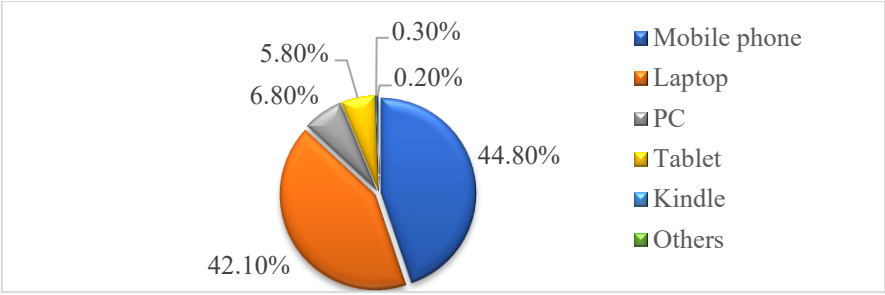

Figure 5.2: The Devices Used for Digital Reading

5.3 Accessibility of Digital Content

As shown in the table, Students were asked about the availability and accessibility of digital content and learning materials in the university.

Table 5.3: Satisfaction with the Accessibility of Digital Content

Satisfaction Level	Frequency	Percentage
Not at all satisfied	13	4.30%
Not satisfied	51	17.00%
Neutral	113	37.70%
Satisfied	99	33.00%
Extremely satisfied	24	8.00%

As shown in Table 5.3, A majority of respondents (37.7%) expressed a neutral opinion regarding the availability of digital content and learning materials in the university. Around 33% of respondents indicated that they are satisfied, and 8% were extremely satisfied, reflecting that 41% of the students hold a positive perception of the university's digital content infrastructure. In contrast, 21.3% of the respondents (17% not satisfied and 4.3% not at all satisfied) expressed dissatisfaction regarding the digital content infrastructure.

5.4 Satisfaction Towards Online (Digital) Reading

As shown in Table 5.4, a large portion of students (35.7%) expressed a neutral opinion regarding their satisfaction with digital reading. This indicates that many students neither strongly support nor oppose digital reading as a replacement for traditional reading. About 35% of respondents (27.7% satisfied + 7.3% extremely satisfied) expressed positive satisfaction with digital reading. However, nearly 30% (20.7% not satisfied + 8.7% not at all satisfied) reported dissatisfaction.

Table 4: Satisfaction Level Towards Online (Digital) Reading

Satisfaction Level	Frequency	Percentage
Not at all satisfied	26	8.70%
Not satisfied	62	20.70%
Neutral	107	35.70%
Satisfied	83	27.70%
Extremely satisfied	22	7.30%

5.5 Health Issues Faced Due to Digital Reading

As shown in Table 5.5 and Figure 2, 50% of the respondents experienced mild mental stress, while 15.6% (combined severe + very severe) experienced higher levels of stress due to the digital reading. Eye strain showed one of the most common issues during digital reading: 46.7% mild, 28% severe, and 9.7% very severe. Only 15.6% reported no discomfort, indicating that almost 85% of respondents experienced some eye strain. A combined 86.7% of students reported feeling tired from digital reading. Headache and Anxiety, 46% mild, 23.7% severe, and 8.7% very severe, together making 78.4% of students affected. Nearly 80% of respondents reported discomfort in the neck or back, with 9% reporting very severe discomfort and 27.3% severe discomfort. A unique finding is the social impact

of digital reading. 34.7% reported severe and 19.3% very severe reduction in social interaction. This suggests that overuse of digital devices may isolate students and reduce peer communication. The figure illustrates the percentage of health issues due to digital reading.

Table 5.5: Health Issues Faced Due to Digital Reading

Health Problem	Very severe (%)	Severe (%)	Mild (%)	None (%)
Mental stress	4.3	11.3	50	34.4
Eye strain	9.7	28	46.7	15.6
Tiredness	8.7	36.7	41.3	13.3
Headache and Anxiety	8.7	23.7	46	21.6
Neck and Back Pain	9	27.3	43.3	20.4
Reduced social interaction	19.3	34.7	29.3	16.7

As shown in Table 5.5 and Figure 5.5, 50% of the respondents experienced mild mental stress, while 15.6% (combined severe + very severe) experienced higher levels of stress due to the digital reading. Eye strain showed one of the most common issues during digital reading: 46.7% mild, 28% severe, and 9.7% very severe. Only 15.6% reported no discomfort, indicating that almost 85% of respondents experienced some eye strain. A combined 86.7% of students reported feeling tired from digital reading. Headache and Anxiety, 46% mild, 23.7% severe, and 8.7% very severe, together making 78.4% of students affected. Nearly 80% of respondents reported discomfort in the neck or back, with 9% reporting very severe discomfort and 27.3% severe discomfort. A unique finding is the social impact of digital reading. 34.7% reported severe and 19.3% very severe reduction in social interaction. This suggests that overuse of digital devices may isolate students and reduce peer communication. The figure illustrates the percentage of health issues due to digital reading.

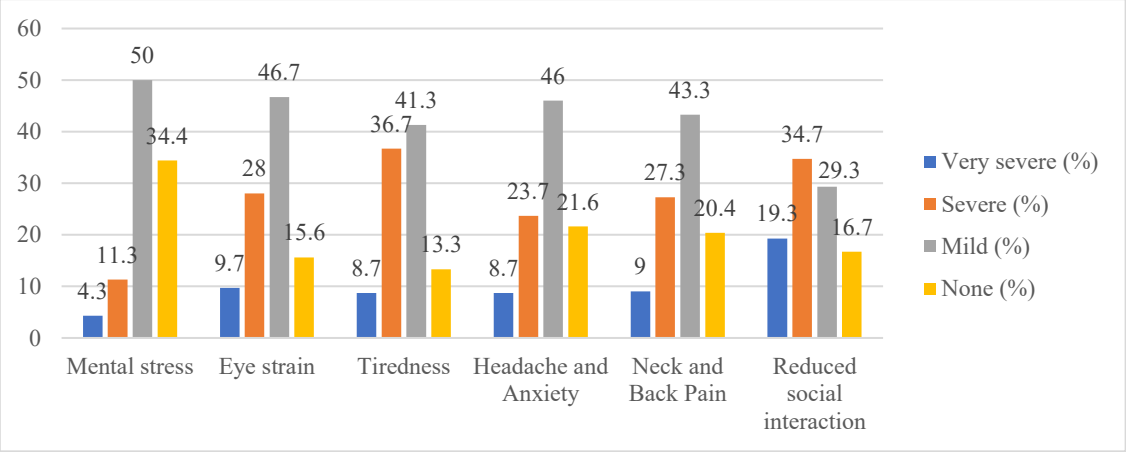

Figure 5.5: Health Issues Faced Due to Digital Reading

6. DISCUSSION

The present study examined the digital reading patterns and related health issues among postgraduate students at the Central University of Punjab. The results indicate that out of convenience, students are now shifting their reading medium from paper to screen, mainly due to the availability of e-resources, reading apps, and devices. Moreover, students' learning process is now enhanced by digital tools such as Google Classroom, Zoom, and Moodle. Convenience and portability are significant factors in device choice for digital reading, with most choosing smartphones and laptops. This shows the global trend toward a screen-based reading culture. Merchant (2020) also points out a similar view on the digital mode of reading; Reading from screens is a dominant mode of communication here in the UK and other European countries. The majority of respondents have a neutral response towards the availability of digital resources in the university. This suggests that the presence of digital resources such as e-books, online journals, and Kindle materials might be due to the university library not subscribing to them. Moreover, the students indicate a neutral opinion regarding their satisfaction with digital reading. While there are numerous benefits to technology use in reading, there are also issues associated with prolonged screen time. Most of the respondents indicated that they suffer from eye strain, headaches, blurred vision, and neck or back pain upon prolonged hours of digital reading. These

symptoms align with the recognised condition known as Computer Vision Syndrome (CVS), which results from extended screen time without proper breaks or bad posture. This result aligns with the findings of Tseng (2014) and Abed Alah et al. (2023). In addition, several students reported sleep disturbance and mental tiredness, which may be linked to excessive screen time in bed time.

7. CONCLUSION

The study concludes that digital reading has become an unavoidable part of students' academic journey, offering convenience, accessibility, and flexibility in information needs. However, the findings also reveal that excessive dependence on digital devices has led to several health-related issues. However, most students still spend extensive screen time without implementing preventive strategies, such as maintaining a good sitting posture, using digital well-being apps, and wearing computer glasses. This shows a discrepancy between digital health literacy and awareness of digital health. So, institutions and libraries should raise awareness among students of digital well-being habits, blue light filters, and the 20-20-20 rule, among other measures, to reduce the potential health-related issues that can arise from prolonged digital reading.

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