

Exploring the Impact of Technology Use on The Mental Health of Teacher Trainees

Mrs. Eesha Sharma¹, Mrs. Suman Gupta²

¹Librarian, School of Education, MIER College of Education (Autonomous), Jammu -180001

²Assistant Professor, School of Education, MIER College of Education (Autonomous), Jammu-180001

Abstract

The growth of the Internet, smartphones, social media, and other digital technologies has changed our world in many ways. With the expansion of technological facilities and systems, the mental well-being of teacher trainees is under more pressure than ever before. The study investigates the impact of technology on the mental health of 100 teacher trainees from a selected college of education, in Jammu city using a descriptive survey research method. A self-prepared questionnaire was employed to assess the impact of technology. The findings reveal that 67% of teacher trainees use 4 to 6 hours of daily screen time. 60% of them use smartphones frequently. 43% of teacher trainees use technology for work tasks, while 36% utilize it for educational purposes. Most of the teacher trainees 72% strongly agree that technology positively impacts their mental health by enhancing connectivity, access to resources, and providing motivation. Also, 28% of teacher trainees agree that technology has been linked to a range of mental health issues, including sleep disorders, anxiety, and depression due to excessive screen time and the constant barrage of notifications. The results of this review indicate that although technological interventions target some mental health and related problems. However, it helps manage and support mental health through various meditation apps, wellness workshops, and wearable devices with sensors. Hence, it is important to balance its use as technology is meant for use not for becoming its slave.

Keywords: Technology, Mental Health, Teacher Trainees, Smartphones, Internet

Introduction

The rapid evolution of digital technologies, including smartphones, social media, and online platforms, has revolutionized education, offering teacher trainees enhanced access to information, collaboration opportunities, and innovative teaching methods. However, this technological surge has also posed challenges to their mental well-being. Prolonged screen time, frequent smartphone usage, and constant digital notifications have been associated with mental health issues such as anxiety, depression, and sleep disorders (Huang, 2010; Zeeni et al., 2018). While technology provides numerous benefits, including improved connectivity and access to learning resources, its overuse can lead to detrimental outcomes.

Teacher trainees, as future educators, often rely on technology for educational purposes, communication, and professional development. Studies reveal that excessive screen time—often 4 to 6 hours daily among this demographic—can have mixed impacts. On one hand, digital platforms promote motivation, resource accessibility, and collaboration (Ventouris, Panourgia, & Hodge, 2021). On the other hand, the constant barrage of digital stimuli contributes to stress and mental fatigue (Schettino,

Marino, & Capone, 2024). Despite these challenges, technology can also support mental well-being through meditation apps, wellness workshops, and wearable devices that track stress indicators (Alhejaili & Alomainy, 2023).

Given the dual impact of technology on teacher trainees, it is crucial to balance its benefits and drawbacks. Striking this balance requires promoting mindful use, integrating digital literacy training, and encouraging healthy technology habits (Büchi, 2024). This study aims to investigate the impact of technology on the mental health of teacher trainees in Jammu City, exploring its influence on their daily lives and well-being. Such research is vital to ensure technology becomes a tool for empowerment rather than a source of stress.

Review of Related Literature

Huang (2010) examined the relationship between Internet use and psychological well-being through 40 studies involving 21,258 participants and 43 independent correlations. The findings revealed a small detrimental effect of Internet use on psychological well-being, with mean correlations of -0.0504 (fixed-effects) and -0.0385 (random-effects). The study evaluated moderators such as type of Internet use, well-being indicators, quality of measures, and participant demographics but found them insignificant in explaining the variation. This suggests future research should identify other factors influencing the link between Internet use and psychological well-being.

Hartley (2013) studied how resilience and mental health affect academic persistence in 121 college students with mental health issues. Sequential regression analysis showed intrapersonal resilience was crucial for students with significant psychological distress. A strong correlation exists between resilience factors and mental health, emphasizing that resilience frameworks can help students manage college challenges. Results suggested promoting resilience could improve learning outcomes and retention for students with mental health concerns, enhancing their academic experience amidst challenges.

Alhejaili & Alomainy (2023) analyzed biomarkers used to monitor stress and anxiety, showcasing wearable technologies' potential in mental wellness. The literature revealed biofeedback training reduced anxiety and improved self-control. Wearable devices demonstrated effectiveness in managing stress through physical activity tracking, which lowered cognitive mental load. The findings emphasized wearable devices as supportive tools for reducing stressors and enhancing mental well-being, presenting opportunities for health monitoring innovations to support individuals' psychological and physical wellness.

Samuolis, Barcellos, LaFlam, Belson & Berard. (2015) examined identity distress and mental health in college students using an online survey. Students diagnosed or treated for mental health issues reported significantly higher identity distress, especially in areas like long-term goals and friendships. Results indicated mental health issues strongly predicted severe identity distress. The study highlighted the importance of addressing identity-related challenges among students to mitigate distress and improve mental health outcomes, offering valuable insights for mental health interventions.

Zeeni, Doumit, Kharma, & Sanchez-Ruiz. (2018) explored the relationship between technology use and well-being in 244 Lebanese students. Mobile phone multimedia use correlated with unhealthy eating and stress, while social media was linked to body image dissatisfaction, eating disorder risks, and anxiety. Dependency on technological devices heightened depression and anxiety. Results highlighted the complex interplay between technology use and mental health, underscoring the need for

strategies to manage technology use and promote healthier behaviors among students.

Fernández-Batanero et al. (2021) reviewed 16 studies on stress and anxiety caused by educational technology integration. Using PRISMA guidelines, findings revealed high anxiety levels among teachers due to insufficient skills for technology adoption. Emotional barriers hindered effective technology use, emphasizing the importance of targeted strategies to reduce stress. Recommendations included professional development to address these challenges, ensuring smoother technology integration, and fostering a supportive teaching environment.

Ventouris et al. (2021) investigated teachers' perspectives on how technology affects children's emotions and behaviors. Semi-structured interviews revealed mixed opinions: while technology supported learning, it raised concerns about digital divides and negative impacts on socialization and self-esteem. Teachers emphasized moderation in technology use and strategies to mitigate socio-economic disparities. Findings underscored the need for informed practices to enhance technology's benefits while addressing its emotional and behavioral challenges in students.

Valkenburg et al. (2022) conducted an umbrella review of 25 studies on social media's impact on adolescent mental health. Associations were generally weak or inconsistent, though some highlighted substantial negative effects. Diverging interpretations stemmed from varying methodologies and contexts. The review identified research gaps and advocated for rigorous studies to clarify social media's mental health impacts. Future work should integrate diverse perspectives to better understand this evolving issue and its implications for youth.

Büchi (2024) proposed a framework connecting digital practices, harms/benefits, and well-being. Digital practices within socio-technical structures often lead to mixed outcomes, impacting subjective well-being. Regression analysis revealed mental health influenced teachers' resource development. The study called for descriptive validity and theory development to clarify digital well-being pathways. Findings emphasized addressing digital harms while maximizing benefits, and promoting balanced digital practices to enhance overall well-being and educational productivity.

Schettino et al. (2024) assessed technostress during COVID-19 among 915 Italian university students using the Technostress Scale. Confirmatory factor analysis validated the scale's reliability, showing correlations with mental health indicators. Results indicated significant technostress effects on students' experiences with technology-enhanced learning. Findings supported the scale's utility in identifying technostress and emphasized interventions to mitigate its impact, improving students' interactions with learning technologies during and beyond the pandemic.

Significance of the Study

This study is significant because it explores the impact of technology use on the mental health of teacher trainees. As technology becomes more common in schools and jobs, it's crucial to understand how it affects our mental well-being. The study found that many teacher trainees use technology a lot, which can be both good and bad. On the positive side, technology helps them to stay connected, access resources easily, and feel motivated. However, using technology too much can lead to problems like trouble sleeping, feeling anxious, or being depressed. The findings of this study can help educators and mental health professionals develop ways to help teacher trainees healthily use technology. By understanding both the good and bad sides of technology, they can support teacher trainees in using technology wisely. It's also important to spread awareness about how technology can affect mental health and encourage people to use it responsibly.

Objectives of the Study

1. To assess the positive and negative effects of technology on mental health concerns:
 - daily screen time of the teacher trainees.
 - devices they used most frequently.
 - checking of the notifications.
 - feeling (stressed, and anxious) due to social media use.
 - exploring the positive impact of the technology on the mental health of teacher trainees.
 - examining the effectiveness of mental health apps.
 - examining the current use of mental health apps to manage stress.
 - investigating the negative impact of the technology on the mental health of teacher trainees.
 - determining whether the teacher trainees experience sleep disturbances related to technology use
2. To ascertain the purpose of using technology for:
 - a) What type of activities do you engage in during your screen time?

Methodology

Method

Research Method for this study is qualitative and Survey method was used to collect data.

Sample

The population consisted of 120 student-teachers of B.Ed. of fourth semester of a randomly selected B.Ed. College of Jammu city. The questionnaire was sent to 120 students through Google form but only 100 students responded, therefore, a sample of 100 student-teachers was selected as sample.

Tools Used

A self-prepared questionnaire was employed to assess the impact of technology use on the mental health of teacher trainees.

Findings

Objective 1. To assess the positive and negative effects of technology on mental health.

a. What is your daily screen time?

As per the responses, 2% teacher trainees spend 2-4 hours daily, 67% teacher trainees spend 4-6 hours, 27% teacher trainees spend 6-8 hours, and only 4% teacher trainees spend more than 8 hours daily on the screen (as shown in figure 1). Most of the teacher trainees spend 4-6 hours daily on the screen.

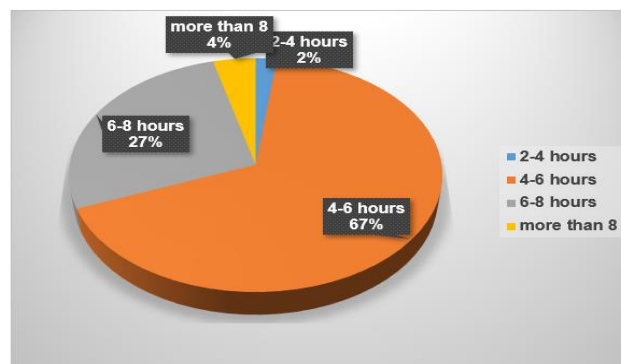


Figure 1: Percentage of daily screen time of teacher trainees

b. Which devices do you use most frequently?

Response depicts that 5% of teacher trainees use smartwatches, 10% use a tablet, 25% use laptops/computers and 60% use smartphones frequently. Most of the teacher trainees use smartphones frequently.

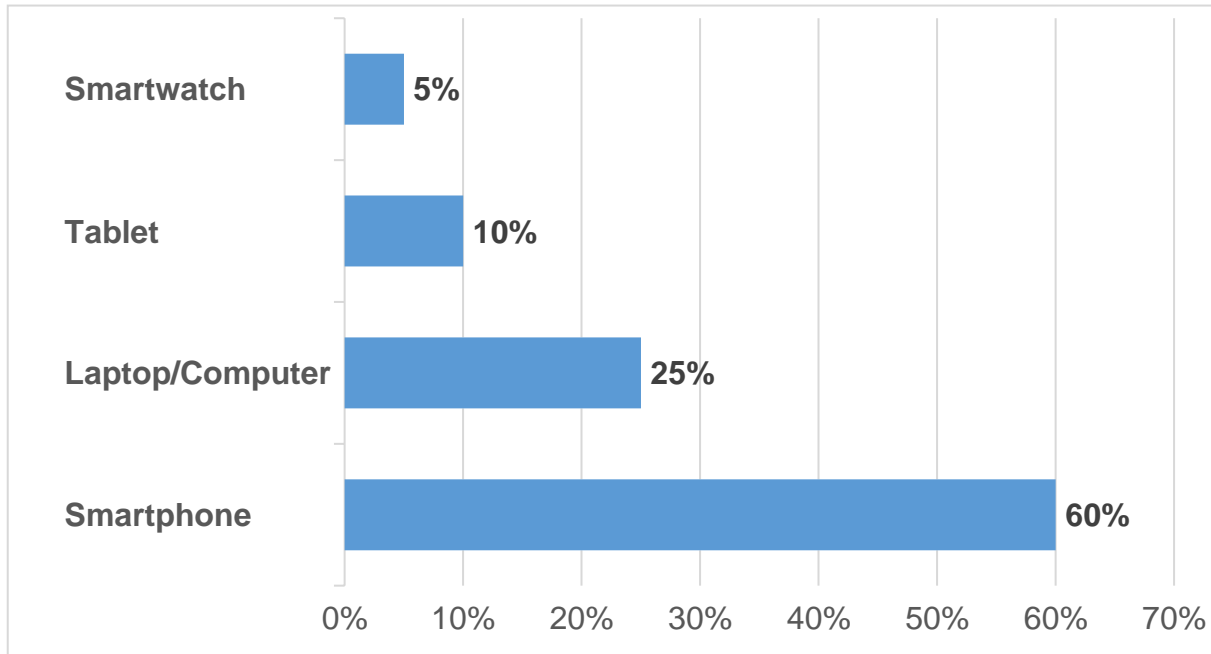


Figure 2: Percentage of frequently used devices by teacher trainees

c. How often do you check your smartphone or electronic device for notifications?

As per the responses, the majority engage with their devices regularly, with 56% checking frequently and 35% very frequently, reflecting a high level of device usage. Minimal engagement is indicated by "Rarely" at 5% and "Occasionally" at 4%, while "Never" was not reported.

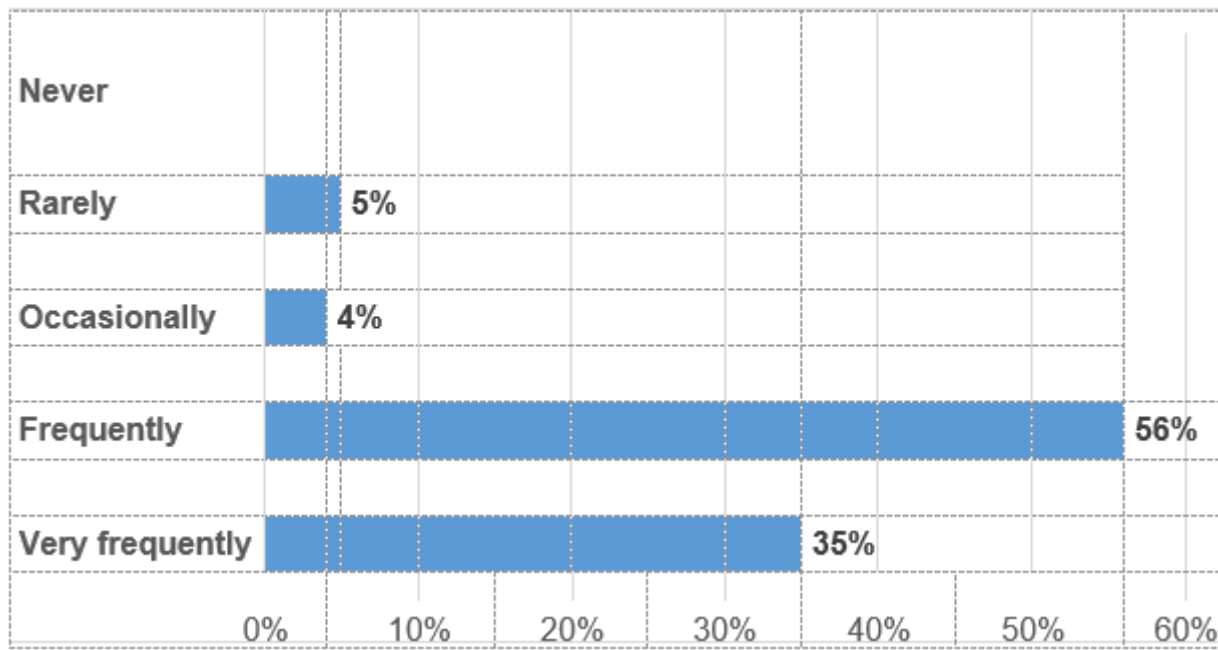


Figure 2: Percentage of frequently used devices by teacher trainees

d. Have you ever felt stressed or anxious due to social media use?

Responses depict the impact of social media on stress or anxiety levels. While 73% reported no such feelings, 27% acknowledged experiencing stress or anxiety due to social media use, highlighting its potential emotional effects on a minority.

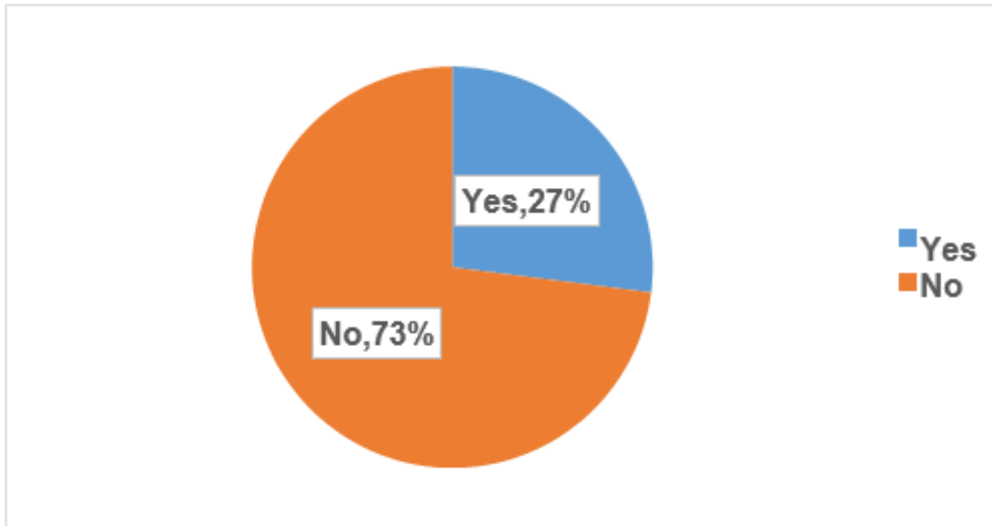


Figure 4: Percentage of feelings of teacher trainees due to social media use

e. Do you feel that your use of technology positively impacts your mental health?

A significant majority of 72% strongly agree, and 15% agree, suggesting a largely positive outlook, while 10% remain neutral, and only 3% disagree on the use of technology and its impacts on mental health

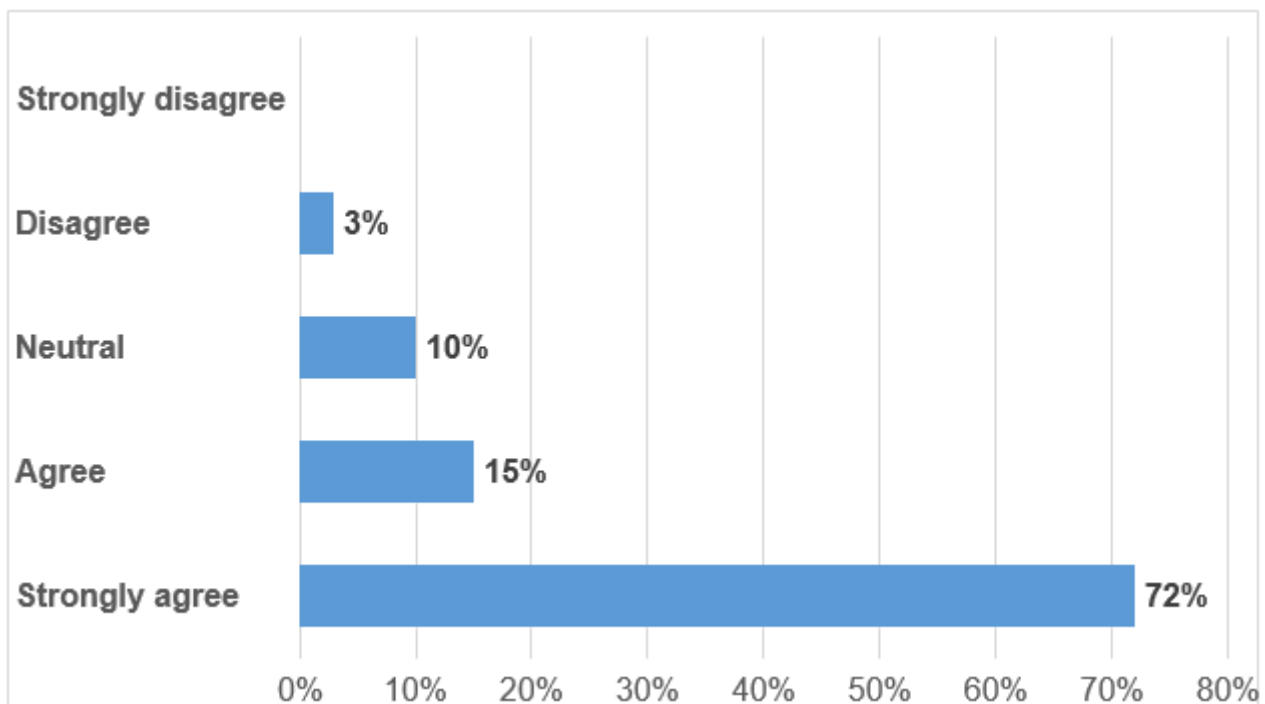


Figure 5: Percentage of positive impacts on mental health

f. Do you find mental health apps effective in helping you manage stress and enhance your overall well-being?

The question explores the effectiveness of mental health apps. A majority of 69% find them effective, while 17% disagree, and 14% are uncertain, indicating varied perceptions of their utility in managing stress and improving well-being.

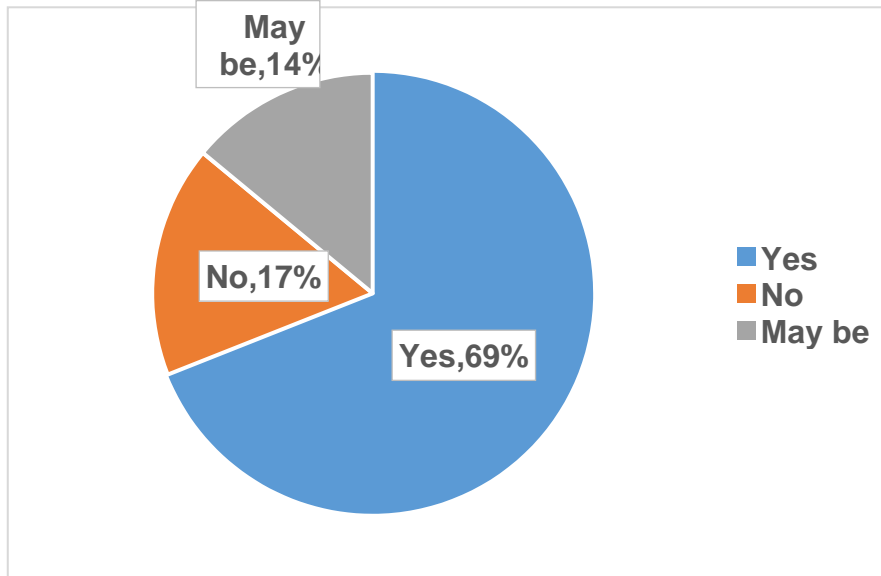


Figure 6: Percentage of the effectiveness of mental health apps

g. Do you currently use mental health apps as part of your routine to manage stress and promote mental well-being?

The question examines the use of mental health apps in daily routines. A majority of 61% incorporate these apps to manage stress and enhance well-being, while 39% do not currently use them.

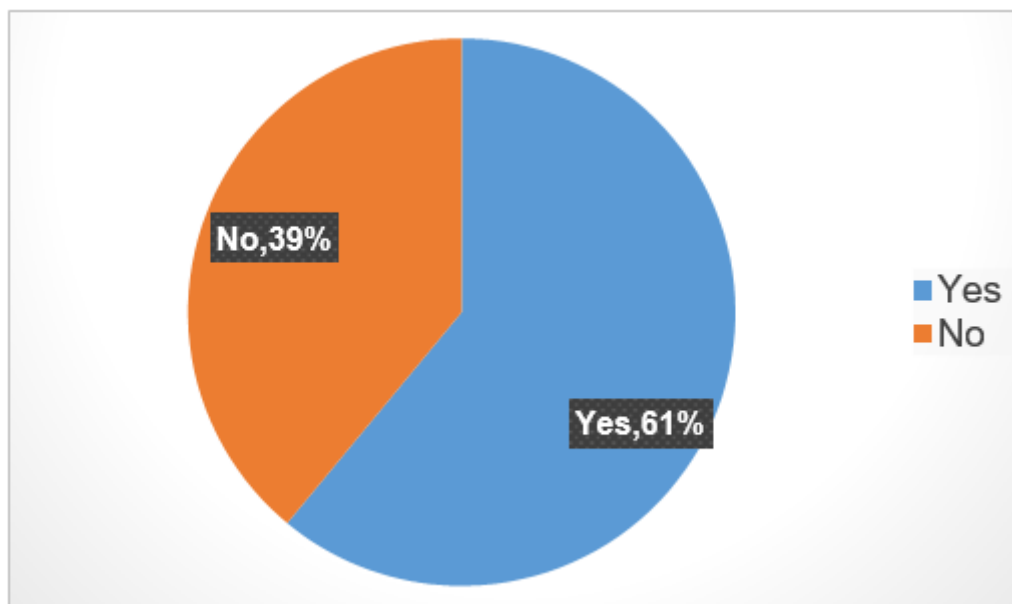


Figure 7: Percentage of use of mental health apps

h. Do you feel that your use of technology negatively impacts your mental health?

As per the responses, 28% strongly agree that it affects them negatively, and a majority of 60% strongly disagree, suggesting most do not perceive technology as harmful to their mental well-being.

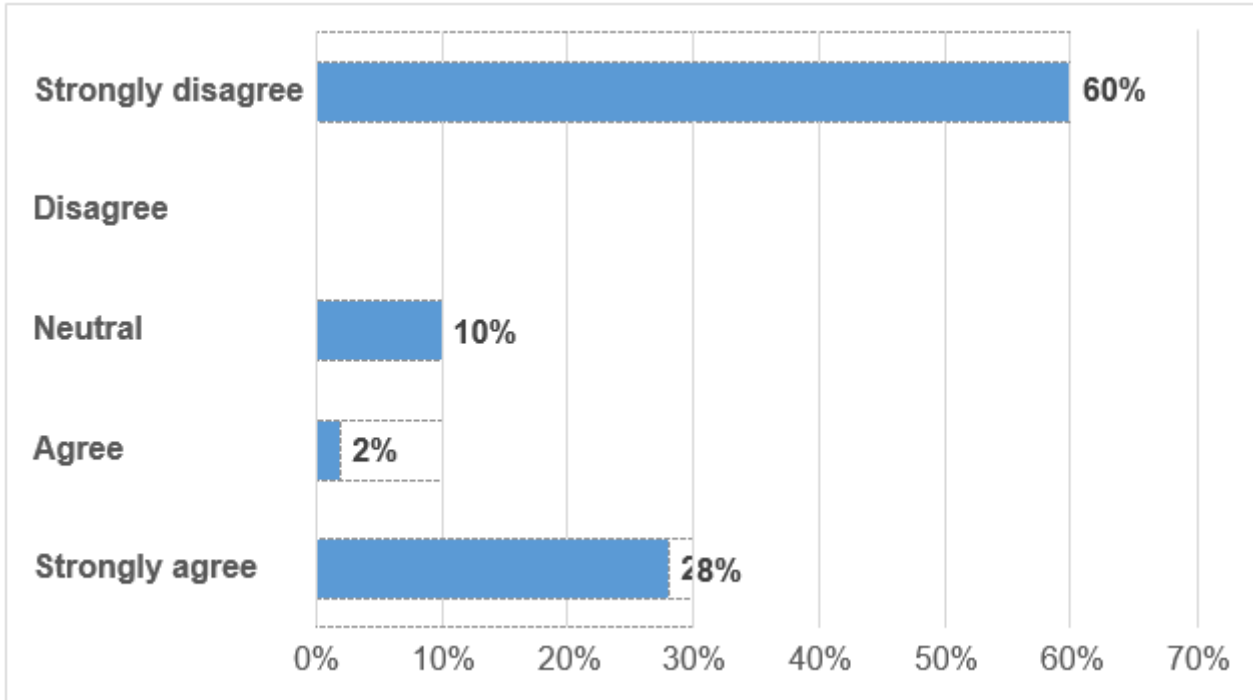


Figure 8: Percentage of negative impacts on mental health

i. Have you ever experienced sleep disturbances (e.g., difficulty falling asleep, staying asleep) related to your technology use?

This question explores the link between technology use and sleep disturbances. While 19% reported experiencing sleep issues, the majority of 68% stated they did not face such problems, indicating a varied impact of technology on sleep quality.

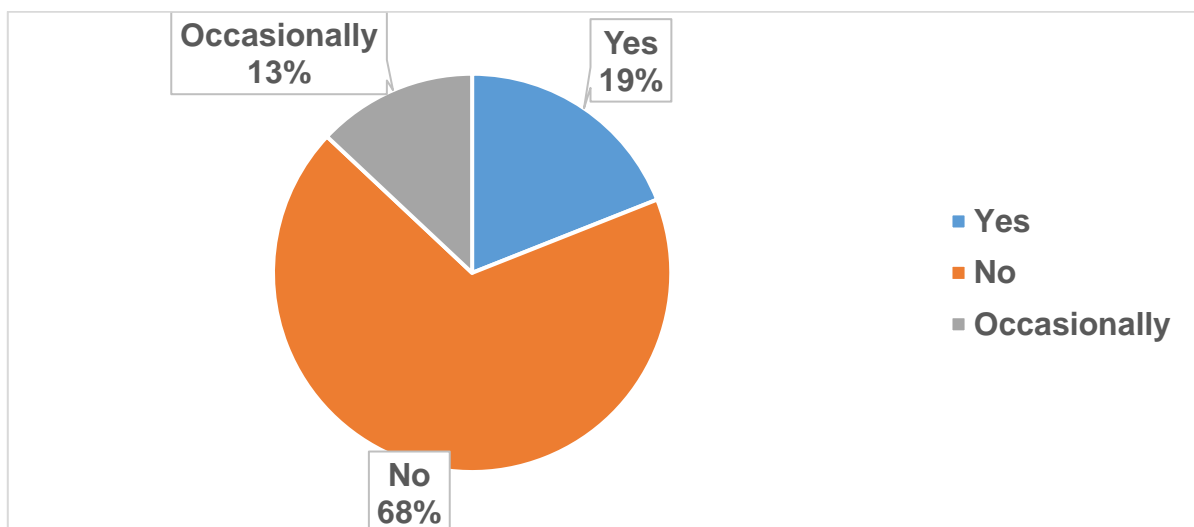


Figure 9: Percentage of the impact of technology on sleep quality

Objective 2. To ascertain the purpose of using technology.

What type of activities do you engage in during your screen time?

Most of the screen time 43% is spent on work-related tasks, followed by educational activities 36% focused on learning and research. Social media browsing takes up 10%, while entertainment, such as movies and games, accounts for 7%. A small portion of 4% is dedicated to online shopping. This balance shows a focus on professional growth and education, with time also allocated for socializing, entertainment, and shopping.

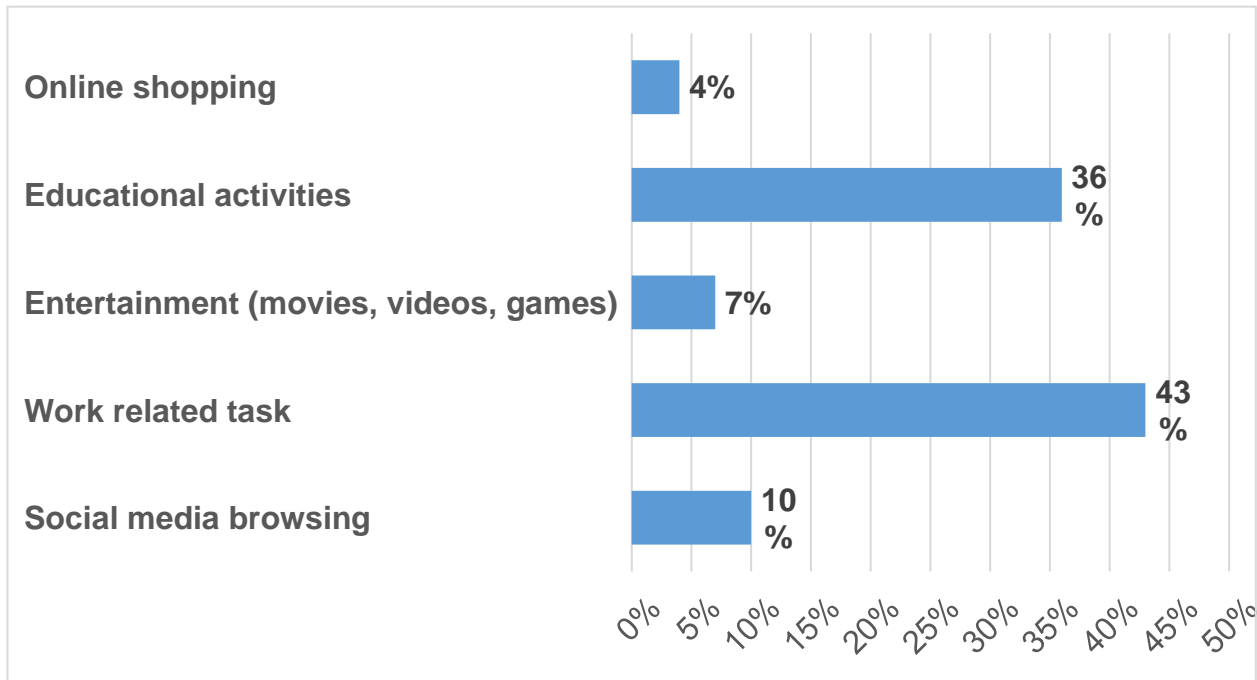


Figure 10: Percentage of engaging activities of screen time of teacher trainees

Conclusion and Discussion

The findings of the study revealed that there is a positive as well as negative impact of technology on the mental health of teacher trainees. On the positive side, technology helps them stay connected, access resources easily, and feel motivated. However, using technology too much can lead to problems like sleeping disorders, feeling anxious, or being depressed. Although technological interventions target some mental health and related problems, however, it helps in managing and supporting mental well-being through various meditation apps, wellness workshops, and wearable devices with sensors. Hence, it is important to strike a balance in its use to minimize the negative impacts. Moreover, technology is meant for use not for becoming its slave.

The study recommends that awareness should be spread about how technology affects mental health and to ensure the controlled use of technology that promotes mental well-being.

The study also recommends the establishment of support services such as counselling sessions etc. for teacher trainees who may be experiencing negative effects on their mental health due to technology use.

Limitations

The study has been delimited to 100 teacher trainees of the specific college of Jammu City only.

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