TPM Vol. 32, No. S7, 2025
ISSN: 1972-6325
https://www.tpmap.org/

Open Access

EFFECT OF DIGITAL DETOXIFICATION ON SLEEP QUALITY, PSYCHOLOGICAL BURDEN AND EMOTIONAL WELL-BEING AMONG YOUNG ADULTS: AN EMERGING MENTAL HEALTH INTERVENTION

SHAMA IQBAL[1] , MAIMOONA[2] , DR. ABID HUSSAIN[3] , AROOJ FATIMA[4] , MONIM RASOOL[5] , ZAINAB MAMOON[6]

[1]COMMUNITY RESEARCH TECHNOLOGIST IN PAKISTAN INSTITUTE OF LIVING AND LEARNING: EMAIL: IQBALSHAMA18@GMAIL.COM
[2]LECTURER PSYCHOLOGY GOVT. GRADUATE COLLEGE FOR WOMEN VEHARI: EMAIL: MAIMOONAMAIMOONA904@GMAIL.COM
[3]NATIONAL PROFESSIONAL OFFICER HEALTH DEPARTMENT MULTAN, PAKISTAN: EMAIL: DRABIDWHO@GMAIL.COM
[4]RESEARCH ASSISTANT AT THE WOMEN UNIVERSITY MULTAN, PAKISTAN: EMAIL: AROJFATIMA094@GMAIL.COM
[5]PH.D SCHOLAR DEPARTMENT OF EDUCATION, GOVERNMENT COLLEGE UNIVERSITY FAISLABAD: EMAIL: MONIMRASOOL@GMAIL.COM
[6]DEPARTMENT OF APPLIED PSYCHOLOGY, THE WOMEN UNIVERSITY MULTAN, PAKISTAN: EMAIL: RAOZAINABMAMOON@GMAIL.COM

Abstract

The increasing use of digital technology has raised concerns regarding sleep quality, psychological burden, and emotional well-being among young adults. Digital detoxification has emerged as a potential behavioral intervention to promote psychological health by encouraging individuals to reduce their digital engagement. The present study aimed to examine the effect of digital detoxification on sleep quality, psychological burden, and emotional well-being. A quasi-experimental research design was employed, involving 30 young adults divided into an experimental group (n = 15) and a control group (n = 15). The experimental group received a digital detoxification intervention, while the control group did not receive the intervention. Pretest and posttest assessments were conducted to evaluate changes in the three outcome variables. Data were analyzed using paired-samples t-tests to compare pretest and posttest scores within each group. The findings revealed a statistically significant improvement in sleep quality in the experimental group, $t(14) = 5.12$, $p < .001$. Psychological burden decreased significantly following the intervention, $t(14) = 6.03$, $p < .001$. Similarly, emotional well-being increased significantly among participants in the experimental group, $t(14) = -6.10$, $p < .001$. In contrast, the control group demonstrated no statistically significant changes in sleep quality, psychological burden, or emotional well-being. These findings suggest that digital detoxification may be a promising behavioral approach to improving sleep and psychological functioning among young adults. However, the small sample size and absence of direct between-group comparisons limit definitive conclusions regarding intervention effectiveness. Further research involving larger samples and more comprehensive statistical analyses is recommended.

Keywords: Digital detoxification, sleep quality, psychological burden, emotional well-being.

INTRODUCTION

The rapid integration of smartphones, social media, streaming platforms, online communication, and other digital technologies into everyday life has fundamentally changed how young adults communicate, study, work, socialize, and regulate their emotions (Yu et al., 2024). Digital technologies provide substantial benefits, including access to information, social connection, educational opportunities, entertainment, and psychological support. However, the increasing intensity and persistence of digital engagement have also generated concerns regarding psychological

health and behavioral functioning (Sala et al., 2024). In particular, prolonged or problematic smartphone and social media use has been associated with sleep disturbances, psychological distress, anxiety, depressive symptoms, stress, loneliness, and reduced subjective well-being. These concerns are particularly relevant to young adults because this developmental period is characterized by increasing autonomy, academic and occupational demands, social transitions, and high dependence on digital communication. A recent systematic review and meta-analysis involving more than one million young people found significant associations between social media use and depression and anxiety, while also identifying substantial heterogeneity across studies, suggesting that the psychological consequences of digital engagement depend on patterns and contexts of use rather than simply the amount of time spent online (Ahmed et al., 2024). The relationship between digital technology use and mental health is particularly important when considering sleep. Sleep is a fundamental biological and psychological process that contributes to emotional regulation, cognitive functioning, physical health, and overall psychological well-being. Young adults frequently experience insufficient or poor-quality sleep, and digital device use has emerged as one potentially modifiable behavioral factor (Chu et al., 2023). Digital engagement before bedtime may interfere with sleep through several mechanisms, including psychological stimulation, notifications and social interaction, bedtime procrastination, displacement of sleep time, and continued cognitive arousal (Han et al., 2024). Moreover, problematic smartphone use can create habitual checking behaviors that extend into the period immediately preceding sleep. An updated systematic review and meta-analysis of 55 studies involving 41,716 participants found that electronic media use was significantly associated with poorer sleep quality and greater sleep problems; problematic use demonstrated particularly strong associations with sleep disturbances (Brautsch et al., 2023).

Recent evidence further strengthens the association between problematic smartphone use and sleep among young adults. A systematic review and meta-analysis of individuals aged 18–25 years found that higher smartphone addiction was moderately associated with poorer sleep quality, including delayed sleep onset, shorter sleep duration, poorer global sleep quality, and greater daytime dysfunction. Although the authors emphasized that much of the existing evidence remains observational, the consistency of the association indicates that problematic smartphone engagement represents a potentially modifiable behavioral risk factor for sleep disturbance (Yin et al., 2025). Similarly, research among university students has reported high levels of poor sleep quality and significant relationships between smartphone addiction and sleep problems, further demonstrating the relevance of this issue within young adult populations (Deivendran et al., 2025). The psychological consequences of excessive digital engagement are equally important. Digital environments are characterized by continuous availability, rapid information exchange, social comparison, notifications, multitasking, and expectations of immediate responsiveness. These characteristics can contribute to psychological overload and sustained cognitive stimulation. In individuals who engage heavily or compulsively with smartphones and social media, digital activities may therefore become a source of psychological burden rather than simply a means of communication (Shannon et al., 2022).

Psychological burden in this context can encompass stress, anxiety, depressive symptoms, cognitive overload, loneliness, and difficulty psychologically disengaging from digital environments (Tang et al., 2024). A recent experimental study of 14-day social media abstinence found that problematic smartphone use was positively associated with depression, anxiety, and fear of missing out, although the abstinence intervention itself did not produce significant between-group differences for all psychological outcomes. Importantly, the intervention did reduce screen time and body-image dissatisfaction, demonstrating that reducing digital engagement can produce selective rather than universally positive effects (De Hesselle & Montag, 2024). These findings suggest that the concept of digital detoxification has emerged as a potentially relevant behavioral and preventive mental health strategy. Digital detoxification generally refers to a deliberate and temporary reduction, restriction, or cessation of digital technology use, particularly smartphones, social media, and other highly engaging digital activities. It is intended to interrupt habitual patterns of digital engagement and facilitate greater psychological and behavioral control over technology use.

Recent empirical research provides encouraging evidence for digital detoxification as a potential mental health intervention. A 2024 systematic review and meta-analysis examining 26 eligible studies and 8,147 participants found that digital detoxification was associated with improvements in subjective well-being and psychological well-being. The pooled effect was small but statistically significant for subjective well-being and was also significant for psychological well-being, although substantial heterogeneity was identified for subjective well-being. These findings suggest that reducing digital engagement may have beneficial psychological consequences, while simultaneously highlighting the importance of intervention characteristics and individual differences (Ansari et al., 2024). Experimental research provides additional support for this proposition. In a randomized controlled trial involving healthy university students, reducing smartphone screen time to a maximum of two hours per day for three weeks produced significant improvements in well-being, depressive symptoms, sleep quality, and stress. The observed

effects were small to medium in magnitude, suggesting that even a relatively brief reduction in smartphone exposure may produce measurable improvements in several dimensions of mental health. However, screen time increased rapidly following the intervention, indicating that maintaining behavioral changes after the intervention may be an important challenge (Pieh et al., 2025). Other experimental studies have produced similarly promising but nuanced findings. A randomized controlled trial involving 338 Generation Z participants found that restricting digital media use was associated with improvements in life satisfaction, mindfulness, autonomy, competence, self-esteem, loneliness, and stress compared with control conditions. Interestingly, restricting social media alone produced substantially fewer benefits and was associated with some potential increases in negative emotion. This distinction is theoretically important because it suggests that digital detoxification may need to address broader patterns of smartphone and digital media engagement rather than focusing exclusively on social media abstinence (Walsh et al., 2024).

Evidence concerning emotional well-being, however, remains inconsistent. A 2024 experimental study of 14-day social media abstinence did not find significant between-group differences for depression, anxiety, fear of missing out, or loneliness, despite reductions in screen time and body-image dissatisfaction (De Hesselle & Montag, 2024). Similarly, a recent systematic review and meta-analysis of social media abstinence interventions involving 4,674 participants found no statistically significant overall effects on positive affect, negative affect, or life satisfaction (Lemahieu et al., 2025). A systematic review and meta-analysis of digital social media detox interventions reported a significant reduction in depressive symptoms but did not find significant effects on stress, life satisfaction, or overall mental well-being. The authors therefore concluded that digital detoxification may have selective rather than generalized effects on mental health (Ramadhan et al., 2024). The relationship between digital detoxification and sleep is particularly promising because sleep may represent one of the most immediate behavioral pathways through which digital disengagement influences psychological functioning. Experimental evidence has shown that restricting smartphone use close to bedtime can reduce sleep latency, increase sleep duration and improve subjective sleep quality, while also reducing pre-sleep arousal and improving positive affect (He et al., 2020). The potential role of pre-sleep cognitive arousal is especially relevant to understanding the mechanisms underlying this relationship. A longitudinal mediation study among Chinese undergraduates with problematic smartphone use examined whether restricting smartphone use while in bed could improve sleep quality through reductions in pre-sleep cognitive arousal. This provides an important theoretical basis for viewing digital detoxification not merely as a reduction in screen exposure but as a behavioral intervention capable of interrupting cognitive and emotional activation before sleep (Tu et al., 2023). Recent research similarly suggests that bedtime exposure and compulsive or problematic digital engagement may be more important for sleep dysregulation than total screen time alone (He et al., 2025).

LITERATURE REVIEW

Digital Technology Use and Psychological Health among Young Adults

Young adulthood represents a period of substantial psychological, social, and behavioral development during which individuals increasingly rely on digital technologies for academic, occupational, interpersonal, and recreational activities. Smartphones and social media provide continuous connectivity, but this constant accessibility may also create difficulties in disengagement. Digital environments can encourage habitual checking, multitasking, social comparison, fear of missing out, and continuous monitoring of social feedback. The relationship between digital engagement and psychological health is complex rather than uniformly negative. A recent systematic review and meta-analysis of social media use among young people identified significant associations between social media use and depression and anxiety, but also emphasized substantial heterogeneity between studies (He et al., 2025). This heterogeneity indicates that the psychological effects of digital engagement may depend on the quality, purpose, intensity, timing, and context of use. Problematic smartphone use appears particularly relevant. Rather than focusing exclusively on duration of use, problematic use captures compulsive checking, loss of control, interference with daily responsibilities, and difficulty reducing use. Such patterns may be more strongly associated with psychological problems than general technology use. Recent evidence among young adults demonstrates a consistent association between problematic smartphone use and poorer sleep, supporting the view that problematic digital engagement represents a potentially important behavioral risk factor (Yin et al., 2025).

Digital Detoxification as an Emerging Intervention

Digital detoxification has emerged in response to growing concerns regarding excessive and uncontrolled digital engagement. Although there is no universally accepted operational definition, it generally involves a deliberate period of reducing or discontinuing smartphone, social media, internet, or other digital activities. The purpose is not necessarily permanent abstinence but rather interruption of habitual patterns and development of greater awareness

and self-regulation. The literature increasingly distinguishes between digital abstinence and digital reduction. Complete abstinence may be difficult because smartphones serve essential academic, occupational, and interpersonal functions. Consequently, interventions involving specific restrictions—such as reducing total screen time or eliminating smartphone use during the pre-sleep period—may represent more realistic approaches. A systematic review of digital detoxification research concluded that reducing social media or smartphone use may produce more beneficial outcomes than complete abstinence in some circumstances. It also emphasized that intervention effectiveness varies according to age, gender, contextual factors, intervention duration, and outcome type (Marciano et al., 2024). The 2024 systematic review and meta-analysis by Ansari and colleagues provides particularly important evidence. Across 26 eligible studies involving 8,147 participants, digital detoxification was associated with significant improvements in subjective and psychological well-being. However, substantial heterogeneity in subjective well-being outcomes indicates that digital detoxification should not be regarded as a universally effective intervention independent of context (Ansari et al., 2024).

Digital Detoxification and Sleep Quality

Sleep represents one of the strongest potential targets of digital detoxification. Digital devices can interfere with sleep through behavioral and psychological mechanisms. Using smartphones at bedtime may delay sleep onset, displace sleep time, increase cognitive stimulation, and encourage users to remain awake longer than intended. Notifications and social interactions can additionally interrupt the transition from wakefulness to sleep. The updated meta-analysis of electronic media use and sleep found significant associations between general electronic media use and decreased sleep quality and between problematic digital use and increased sleep problems (Han et al., 2024). Evidence specifically concerning young adults is also compelling, with recent meta-analytic findings showing a moderate relationship between smartphone addiction and poor sleep quality (Yin et al., 2025). Intervention evidence further suggests that reducing digital exposure may improve sleep. The recent randomized controlled trial involving university students found that three weeks of reducing smartphone screen time to no more than two hours per day produced a significant improvement in sleep quality (Pieh et al., 2025). Similarly, research targeting smartphone use immediately before bedtime has demonstrated improvements in sleep latency, sleep duration, and subjective sleep quality (He et al., 2020). These findings support the proposition that sleep may be an important pathway through which digital detoxification produces broader psychological benefits.

Digital Detoxification and Psychological Burden

Psychological burden encompasses a range of negative psychological experiences, including stress, anxiety, depressive symptoms, cognitive overload, and difficulties in emotional regulation. Excessive digital engagement may contribute to psychological burden by exposing individuals to continuous social information, social comparison, online conflict, academic or occupational demands, and pressure for constant availability. Evidence for the effects of digital detoxification on psychological burden is encouraging but inconsistent. A 2024 meta-analysis found that digital social media detoxification significantly reduced depressive symptoms but did not demonstrate significant effects on stress or overall mental well-being (Ramadhan et al., 2024). Experimental evidence has nevertheless demonstrated that reductions in digital engagement can influence stress and depressive symptoms. In the 2025 randomized controlled trial of university students, smartphone screen-time reduction produced significant improvements in stress and depressive symptoms in addition to improvements in sleep and well-being (Pieh et al., 2025). A separate experimental study involving Generation Z participants found that restricting digital media use reduced stress and loneliness and improved several indicators of psychological functioning (Walsh et al., 2024). These findings suggest that broader digital reduction may have more consistent psychological benefits than interventions that focus exclusively on social media.

Digital Detoxification and Emotional Well-being

Emotional well-being refers broadly to the capacity to experience positive emotional states, maintain psychological balance, and function adaptively in everyday life. Because digital platforms can influence social comparison, emotional contagion, interpersonal relationships, and self-evaluation, reducing digital exposure may theoretically influence emotional functioning. However, research in this area has produced mixed results. A recent systematic review and meta-analysis found no significant overall effects of social media abstinence on positive affect, negative affect, or life satisfaction (Lemahieu et al., 2025). A meta-analysis similarly concluded that digital detoxification can improve subjective and psychological well-being, although the magnitude of these effects varies across studies (Ansari et al., 2024).

Rationale of the Study

The increasing dependence on smartphones and digital media among young adults has raised concerns about poor sleep quality, psychological burden, and reduced emotional well-being. Excessive digital engagement, particularly before bedtime, may contribute to sleep disturbances, stress, anxiety, and emotional dysregulation. Digital detoxification has emerged as a promising behavioral intervention aimed at reducing problematic digital use and promoting healthier psychological functioning. However, evidence regarding its effects on sleep, psychological burden, and emotional well-being remains limited and inconsistent. Therefore, the present study aims to examine whether digital detoxification can improve these interconnected aspects of mental health among young adults. The findings may provide evidence for developing practical, low-cost digital wellness strategies as an emerging mental health intervention.

Significance of the Study

This study is significant because it examines digital detoxification as a potentially practical and accessible approach to improving mental health among young adults. It may provide evidence regarding whether reducing digital engagement can improve sleep quality, decrease psychological burden, and enhance emotional well-being. The findings may help young adults develop healthier and more balanced patterns of technology use. Mental health professionals may use the findings to consider digital-use management as part of preventive and supportive interventions. The study may also contribute to understanding the relationship between digital behavior, sleep, and psychological functioning. Furthermore, it can provide a foundation for developing evidence-based digital wellness programs in educational and community settings. Ultimately, the study may contribute to emerging research on digital detoxification as a low-cost mental health intervention.

RESEARCH METHODOLOGY

Research Design

The study employed a quasi-experimental research design to examine the effect of digital detoxification on sleep quality, psychological burden, and emotional well-being among young adults. A randomized controlled design was selected because it allowed the researcher to compare changes in the intervention group with those observed in a control group over the same period. The study consisted of two groups: a digital detoxification intervention group and a wait-list control group. Both groups completed the outcome measures before and after the intervention. The intervention group received a structured three-week digital detoxification program, whereas the wait-list control group continued their usual smartphone-use patterns during the study period and was offered the intervention after the completion of post-intervention assessment.

Population and Sampling

Young adults were the population of the study. The sample consisted of 30 young adults aged 18–25 years who demonstrated problematic smartphone use. Participants were recruited from the general population through purposive sampling. Initially, potential participants were screened for problematic smartphone use using the Smartphone Addiction Scale–Short Version (SAS-SV). Those who met the predetermined eligibility criterion were invited to participate in the study. After obtaining informed consent and completing the eligibility assessment, 30 participants were selected for the intervention study. The participants were then randomly allocated into two equal groups using a random allocation procedure. The intervention group consisted of 15 participants, while the wait-list control group consisted of 15 participants.

RESEARCH INSTRUMENTS

Smartphone Addiction Scale–Short Version (SAS-SV)

The Smartphone Addiction Scale–Short Version (Kwon et al., 2013) was used as a screening measure to identify participants with problematic smartphone use. The scale assessed behavioral characteristics associated with problematic smartphone engagement, including difficulty controlling smartphone use, interference with daily activities, and withdrawal-related experiences. The SAS-SV was administered during the screening stage and was not necessarily treated as a primary outcome measure.

Pittsburgh Sleep Quality Index (PSQI).

Sleep quality was assessed using the Pittsburgh Sleep Quality Index (Buysse et al., 1989). The PSQI assessed different dimensions of sleep during the preceding period, including subjective sleep quality, sleep latency, sleep duration,

habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. A higher global score indicated poorer sleep quality. The PSQI was administered to participants before and after the intervention to determine whether sleep quality changed following digital detoxification.

Depression Anxiety Stress Scales–21 (DASS-21)

Psychological burden was assessed using the Depression Anxiety Stress Scales–21 (Henry & Crawford, 2005). The instrument measured three dimensions of psychological distress: depression, anxiety, and stress. The DASS-21 was administered at pre-intervention and post-intervention stages. The scores were used to determine whether the digital detoxification intervention was associated with a reduction in psychological burden among the participants.

WHO-5 Well-Being Index

Emotional well-being was assessed using the WHO-5 Well-Being Index (Topp et al., 2015). The measure assessed participants' subjective psychological well-being and positive functioning. Higher scores represented greater well-being. The WHO-5 was administered at both assessment points to determine whether participants experienced an improvement in emotional well-being following the intervention.

Digital Detoxification Intervention

The digital detoxification intervention was conducted over a period of three weeks. The intervention was designed as a structured reduction in non-essential smartphone use rather than complete abstinence from smartphones. This approach was adopted because young adults commonly require smartphones for academic communication, educational activities, emergencies, and essential interpersonal communication. Participants were therefore instructed to reduce recreational and unnecessary smartphone use while retaining essential functions. During the first week, participants were provided with psychoeducation regarding problematic smartphone use and its potential relationship with sleep and psychological well-being. They were instructed to monitor their baseline smartphone use and identify situations in which they used their smartphones unnecessarily. Participants were asked to disable unnecessary notifications, avoid recreational smartphone use during meals and study periods, and establish a consistent smartphone-free period before bedtime. During the second week, participants were instructed to further reduce non-essential smartphone use. They were asked to avoid social media and entertainment applications during predetermined periods of the day and to maintain a smartphone-free study period. Particular emphasis was placed on reducing smartphone use during the evening and before sleep. Participants were encouraged to keep their smartphones away from their beds during sleeping hours and to replace recreational smartphone use with alternative activities such as reading, walking, exercise, hobbies, relaxation, or face-to-face social interaction. During the third week, participants were instructed to maintain the reduced level of smartphone use and consolidate healthier digital-use habits. They were encouraged to identify personal triggers that resulted in excessive smartphone use and develop strategies for managing these triggers. Participants continued to follow the bedtime smartphone restriction and other digital-detoxification practices established during the previous two weeks. The final week focused on maintaining behavioral changes and developing sustainable patterns of digital engagement.

Monitoring of Intervention Adherence

Participants' adherence to the intervention was monitored throughout the three-week period. Participants were asked to provide weekly information regarding their smartphone screen time through the built-in Screen Time or Digital Well-being function available on their smartphones. These records were used to determine whether participants had reduced their smartphone use during the intervention. Participants were also asked to maintain a brief daily record of their adherence to the intervention requirements. The researcher provided periodic reminders and brief supportive contact to encourage adherence without providing intensive psychological treatment.

Procedure

Following ethical approval from the relevant institutional authority, participants were recruited from the university population. Potential participants were provided with information regarding the purpose, procedures, duration, potential benefits, and requirements of the study. Written informed consent was obtained from students who agreed to participate. Participants were initially screened using the SAS-SV, and those who met the predetermined criteria for problematic smartphone use were assessed against the remaining inclusion and exclusion criteria. Eligible participants completed the pre-intervention assessment (T1), which included the PSQI, DASS-21, and WHO-5. Demographic information such as age, gender, academic level, and general smartphone-use characteristics was also collected. After completion of the baseline assessment, the 30 participants were randomly assigned to either the intervention group or the wait-list control group. The intervention group then participated in the three-week digital detoxification program. Participants in the wait-list control group were instructed to continue their usual smartphone-use behavior and were not provided with the digital detoxification intervention during the study period. Both groups were contacted according to the study schedule to minimize participant loss and maintain engagement. At the end of the three-week intervention period, both groups completed the post-intervention

assessment (T2) using the same PSQI, DASS-21, and WHO-5 measures. Smartphone screen-time information was also collected from the intervention group to assess adherence and changes in smartphone use. The wait-list control group was subsequently offered the digital detoxification program after completion of the post-intervention assessment.

Control of Potential Confounding Variables

Several procedures were adopted to minimize the influence of potential confounding variables. Participants were recruited from a relatively similar developmental group, namely university students aged 18–25 years. Random allocation was used to distribute individual differences between the intervention and control groups. Participants were also asked to maintain their usual academic and daily routines during the study and not to initiate other structured interventions specifically targeting smartphone use, sleep, or psychological well-being during the intervention period. Information regarding major changes in medication, psychological treatment, or significant life circumstances was also monitored where appropriate.

Ethical Considerations

Ethical principles were followed throughout the research process. Approval was obtained from the relevant institutional ethics committee before data collection. Participation was voluntary, and participants were informed that they could withdraw from the study at any stage without penalty. Written informed consent was obtained from all participants. Confidentiality and anonymity were maintained by assigning identification codes rather than recording participants' names on research data. Smartphone-use information was collected only for research purposes, and participants' private messages, photographs, application content, or personal communications were not accessed. Data were stored securely and were used solely for research purposes. Participants who experienced significant psychological discomfort or distress were advised to seek appropriate professional support.

Data Analysis

The collected data were analyzed using SPSS. Inferential statistics was used to test hypothesis of the study. Paired samples t-test was performed to compare the mean scores of sleep quality, psychological burden and emotional well-being among young adults with respect to pretest and posttest of experimental and control group. A paired-samples t-test is a statistical test used to determine whether there is a significant difference between the means of two related measurements, such as pretest and posttest scores from the same participants.

RESULTS

Table 1: Paired-Samples t-Test Comparing Pretest and Posttest Sleep Quality Scores (n = 15 per group)

Group	Assessment	M	SD	Mean difference	t	p
Experimental	Pretest	10.80	2.10			
	Posttest	7.60	1.80	3.20	5.12	< .001
Control	Pretest	10.40	2.00			
	Posttest	10.10	2.10	0.30	0.78	.449

The experimental group showed a statistically significant improvement in sleep quality from pretest (M=10.80, SD=2.10) to posttest (M=7.60, SD=1.80), t(14)=5.12, p<.001. In contrast, the control group showed no significant change, t(14)=0.78,p=.449. These findings suggest that digital detoxification improved sleep quality among young adults.

Table 2: Paired-Samples t-Test Comparing Pretest and Posttest Psychological Burden Scores (n = 15 per group)

Group	Assessment	M	SD	Mean difference	t	p
Experimental	Pretest	25.60	4.20			
	Posttest	19.20	3.80	6.40	6.03	< .001
Control	Pretest	24.90	4.00			
	Posttest	24.30	4.10	0.60	1.12	.282

The experimental group showed a statistically significant reduction in psychological burden from pretest (M=25.60, SD=4.20) to posttest (M=19.20, SD=3.80), t (14) =6.03, p<.001. In contrast, the control group showed no significant change, t (14) =1.12, p=.282. These findings suggest that digital detoxification helped to reduce psychological burden among young adults.

Table 3: Paired-Samples t-Test Comparing Pretest and Posttest Emotional Well-Being Scores (n = 15 per group)

Group	Assessment	M	SD	Mean difference	t	p
Experimental	Pretest	42.30	5.10			
	Posttest	49.10	4.80	−6.80	−6.10	< .001
Control	Pretest	43.00	4.90			
	Posttest	43.70	5.00	−0.70	−1.20	.250

The experimental group showed a statistically significant increase in emotional well-being from pretest (M=42.30, SD=5.10) to posttest (M=49.10, SD=4.80), t (14) =−6.10, p<.001. In contrast, the control group showed no significant change, t (14) =−1.20, p=.250. These findings suggest that digital detoxification may enhance emotional well-being among young adults.

DISCUSSION

The present study examined the effect of digital detoxification on sleep quality, psychological burden, and emotional well-being among young adults. The findings revealed statistically significant pretest-to-posttest improvements in all three outcomes in the experimental group, whereas the control group showed no statistically significant changes. These findings provide preliminary support for digital detoxification as a potential behavioral intervention for promoting mental health among young adults. The results are broadly consistent with previous research suggesting that reducing problematic digital engagement may improve sleep and psychological functioning, although the magnitude and consistency of these benefits vary across studies and intervention approaches. The findings indicated a statistically significant improvement in sleep quality in the experimental group. In contrast, the control group did not demonstrate a significant change in sleep quality. This finding suggests that participation in the digital detoxification intervention was associated with improved sleep quality among young adults. The present finding is consistent with He et al. (2020), who reported that restricting smartphone use before bedtime improved sleep-related outcomes, including sleep latency, sleep duration, and subjective sleep quality. Similarly, Pieh et al. (2025) found that reducing smartphone screen time among university students significantly improved sleep quality following a three-week intervention. These experimental findings support the possibility that modifying digital-use behaviors can produce meaningful improvements in sleep. Furthermore, the systematic review and meta-analysis by Han et al. (2024) identified significant associations between electronic media use and poorer sleep outcomes, while Yin et al. (2025) reported an association between smartphone addiction and poorer sleep quality among young adults. Taken together, these findings suggest that digital engagement may be an important modifiable behavioral factor associated with sleep disturbances. The second major finding was a statistically significant reduction in psychological burden in the experimental group. Conversely, the control group showed no statistically significant change. This result suggests that digital detoxification may help reduce psychological burden among young adults. The present findings are consistent with Pieh et al. (2025), who reported improvements in stress and depressive symptoms following a reduction in smartphone screen time among university students. Similarly, Walsh et al. (2024) found that restricting digital media use was associated with reduced stress and loneliness and improvements in several indicators of psychological functioning among Generation Z participants. These studies support the proposition that modifying digital-use patterns may contribute to improve psychological functioning, particularly when interventions address broader digital engagement rather than social media use alone. However, Ramadhan et al. (2024) found that social media detoxification significantly reduced depressive symptoms. The significant reduction in psychological burden in the present study may therefore indicate that the intervention was beneficial for the particular dimension of psychological functioning measured. The third major finding concerned emotional well-being. The experimental group demonstrated a statistically significant increase emotional well-being. In comparison, the control group showed no statistically significant change. This finding suggests that digital detoxification may be associated with improved emotional well-being among young adults. Reducing digital engagement may provide individuals with more opportunities for face-to-face interaction, physical activity, leisure, and restorative experiences. It may also reduce exposure to social comparison and emotionally demanding online content, potentially supporting a more balanced emotional state. The present findings are consistent with Ansari et al. (2024), whose systematic review and meta-analysis found significant improvements in subjective and psychological well-being following digital detoxification interventions. Similarly, Walsh et al. (2024) reported improvements in life satisfaction, mindfulness, autonomy, competence, and self-esteem following restrictions on digital media use. These findings suggest that digital detoxification may influence emotional well-being through several pathways, including improved self-regulation, reduced digital demands, and greater engagement with activities outside digital environments. Consequently, pattern of findings is broadly consistent with the literature suggesting that digital detoxification can produce selective

improvements in psychological functioning. Ansari et al. (2024) reported positive effects on well-being, Pieh et al. (2025) identified improvements in sleep and psychological outcomes following smartphone screen-time reduction, and He et al. (2020) demonstrated the potential benefits of restricting bedtime smartphone use. At the same time, the mixed results reported by Ramadhan et al. (2024) and Lemahieu et al. (2025) emphasize that digital detoxification should not be considered a universally effective intervention.

CONCLUSION

The present study examined the effect of digital detoxification on sleep quality, psychological burden, and emotional well-being among young adults. The findings revealed a significant improvement in sleep quality and a reduction in psychological burden in the experimental group following the intervention. A significant increase in emotional well-being was also observed among participants in the experimental group. In contrast, the control group showed no statistically significant changes in any of the three outcomes. These findings suggest that digital detoxification may be a promising behavioral intervention for promoting mental health among young adults. The study highlights the potential benefits of reducing digital engagement to support better sleep and psychological functioning. However, further research with larger samples and between-group comparisons is needed to confirm the effectiveness of this intervention.

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