OPEN ACCESS

Haya: The Saudi Journal of Life Sciences
Abbreviated Key Title: Haya Saudi J Life Sci
ISSN 2415-623X (Print) | ISSN 2415-6221 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

Digital Dissonance and Mindful Restoration: Promoting Psychological Well-Being and Self-Regulated Learning in Internet-Overused Adolescents

Tresa Mini George[1*]

[1]Independent Researcher, Kanjirapally, Kottayam, Kerala, India

DOI: https://doi.org/10.36348/sjls.2025.v10i01.003 | **Received:** 03.12.2024 | **Accepted:** 15.01.2025 | **Published:** 21.01.2025

***Corresponding author:** Tresa Mini George
Independent Researcher, Kanjirapally, Kottayam, Kerala, India, Email: littletreesa21@gmail.com

Abstract

The developmental transition of late adolescence, characterized by profound identity formation and neurocognitive maturation, has been complicated by the ubiquity of the digital landscape. This study investigates the impact of internet overuse on the psychological well-being (PWB) and self-regulated learning (SRL) of adolescents in Kerala, India. Utilizing a pre-test post-test control group design, the research evaluates the efficacy of Mindfulness-Based Cognitive Therapy (MBCT) as an intervention. A sample of 120 adolescents (N=120), screened for moderate to severe internet addiction, was equally divided into experimental and control groups. The findings indicate that excessive internet use significantly impairs both psychological well-being and self-regulated learning among adolescents, irrespective of gender or residential background. The 8-week MBCT intervention yielded statistically significant improvements in both Psychological Well-being ($p < .001$) and Self-Regulated Learning ($p < .001$) compared to the control group. These findings suggest that integrating mindfulness-based cognitive strategies into educational curricula can effectively counteract the cognitive fragmentation and emotional dysregulation associated with hyper-connectivity, offering a scalable pathway for adolescent holistic health.

Keywords: Internet Overuse, Adolescents, Mindfulness-Based Cognitive Therapy (MBCT), Psychological Well-Being (PWB), Self-Regulated Learning (SRL).

INTRODUCTION

Adolescence is a developmental borderland, described by clinical psychologist Mary Pipher as a stage "teeming with energy and fraught with danger" (Pipher, cited as Arnett, 2000). It is a period defined not merely by biological puberty but by a psychosocial metamorphosis where individuals navigate the precarious shift from childhood dependence to adult autonomy. In the contemporary Indian context, this transition is increasingly mediated by digital interfaces. India is home to the world's largest adolescent population, with over 253 million individuals aged 10-19 years (UNFPA, 2019), and in the state of Kerala alone, this demographic constitutes over 3.3 million lives (Census of India, 2011). As these "digital natives" forge their identities, the internet has become their primary environment for socialization, education, and recreation (IAMAI, 2020). However, this immersion comes at a steep psychological cost. The phenomenon of internet overuse has transcended simple habituation to become a significant behavioural health concern. Defined by excessive, uncontrolled urges to be online that lead to distress or impairment, internet overuse is reshaping the cognitive and emotional architecture of youth (Shaw & Black, 2008). The immediate consequences are often visible: sleep disruption, academic decline, and physical lethargy (Akin, 2012). Yet, the internal ramifications are far more insidious. Research consistently links problematic internet use with heightened hostility, depression, and a profound sense of loneliness (Yen, Ko, & Yen, 2007; Morahan-Martin & Schumacher, 2000).

In response to these challenges, purely restrictive measures or traditional medical models often prove inadequate as they fail to address the underlying emotional and personality layers of the individual (Kirmayer et al., 2014). This study posits Mindfulness-Based Cognitive Therapy (MBCT) as a holistic intervention. By fusing the non-judgmental attention training of mindfulness with the cognitive restructuring of CBT, MBCT aims to rehabilitate the self-regulation

mechanisms eroded by algorithmic feedback loops (Segal et al., 2002). This research specifically examines whether an 8-week MBCT program can restore psychological well-being and enhance self-regulated learning in late adolescents residing in Kerala.

The adolescent crisis and digital identity

Erik Erikson's psychosocial theory posits that the primary task of adolescence is the resolution of the "Identity vs. Role Confusion" crisis (Erikson, 1968). In the pre-digital era, this involved experimenting with social roles in physical communities. Today, the internet offers an infinite stage for identity experimentation, but it also risks "identity diffusion" through constant social comparison and the fragmentation of the self across multiple platforms (Twenge & Campbell, 2009). The pressure to curate a perfect digital persona can induce anxiety and degrade self-worth, directly impacting psychological well-being.

Self-Regulated Learning (SRL) in the attention economy

Self-Regulated Learning (SRL) refers to the capacity to actively monitor, control, and direct one's cognitive, motivational, and behavioural processes toward the attainment of learning goals (Zimmerman, 2000). It encompasses core dimensions such as goal setting, strategic planning, self-motivation, and inhibitory control. In the contemporary digital environment, often described as an "attention economy," these regulatory capacities are persistently challenged. Online platforms are deliberately engineered to capture and sustain user attention through continuous notifications, algorithmic personalization, and rapid reward cycles. Such features erode the prefrontal cortex's capacity for sustained attention, working memory, and delayed gratification (Mishra & Sharma, 2016). For adolescents, whose executive functions are still developing, this results in fragmented learning, reduced engagement in cognitively demanding tasks, and difficulty sustaining "deep work." Consequently, compromised SRL manifests as academic inefficiency, procrastination, and heightened educational stress.

Internet overuse and psychological well-being

Psychological well-being in adolescence encompasses emotional stability, positive self-evaluation, autonomy, environmental mastery, and meaningful social connectedness. Excessive internet use poses a significant threat to these dimensions by disrupting emotional regulation and psychological balance. Research has consistently shown that internet addiction is associated with lower levels of psychological well-being and life satisfaction among adolescents (Kim et al., 2017). The compulsive nature of online engagement often produces symptoms similar to behavioural dependence, including irritability, restlessness, mood fluctuations, and anxiety when access is limited or interrupted (Kuss & Griffiths, 2017). Such emotional dysregulation undermines adolescents' ability to cope with everyday stressors and weakens their sense of control and self-efficacy. Moreover, prolonged exposure to online social comparison and digitally mediated interactions can distort self-perception, heighten emotional distress, and contribute to reduced overall well-being. Evidence from Indian adolescents further supports this association, indicating that problematic internet use is linked to poorer psychological well-being, while mindfulness-based interventions show promise in improving mental health outcomes (Singh et al., 2019). Thus, internet overuse not only affects emotional balance but also disrupts the psychological foundations essential for healthy adolescent development.

Mindfulness-Based Cognitive Therapy (MBCT)

MBCT operates on the premise that "awareness" is the precursor to "regulation." By training adolescents to observe their thoughts and impulses (e.g., the urge to check a phone or a surge of anger) without immediate reactivity, MBCT creates a "cognitive gap" where choice becomes possible (Kabat-Zinn, 2003). This mechanism is theoretically potent for treating addiction and aggression, as it targets the automaticity of the behaviour. Previous studies have shown MBCT's efficacy in reducing depression and anxiety (Hofmann et al., 2010), but its application to the specific triad of internet addiction, psychological well-being, and SRL in the Indian context remains underexplored.

METHODOLOGY

Research Design

This study employed a quantitative, experimental research design using a Pre-test Post-test Control Group methodology. This rigorous approach allows for the isolation of the MBCT intervention's effects by controlling for extraneous variables and maturation effects.

Participants and Sampling

The study was conducted in the Kottayam district of Kerala, involving late adolescents (aged 18-19) from Aided Arts & Science colleges. A multi-stage cluster sampling technique was utilized:

- **Cluster Selection:** Two colleges were randomly selected from a pool of 18 institutions.
- **Screening:** A total of 1200 first-year graduate students were screened using Young's Internet Addiction Test (IAT).
- **Identification:** 274 students were identified as having "moderate" (score 50-79) to "severe" (score 80-100) internet addiction.
- **Final Sample:** From the identified pool, 126 students volunteered. After attrition, the final effective sample consisted of **120 participants** (N=120).
- **Grouping:** Participants were equally divided into an Experimental Group (n=60) and a

Control Group (n=60). The sample was balanced regarding gender (50 males, 70 females) and residence (47 urban, 73 rural).

Instruments

Standardized tools with established psychometric properties were used for data collection:

- **Internet Addiction Test (IAT):** Developed by Kimberly Young (1996), this 20-item scale assesses the severity of internet dependency. It is the gold standard in the field, with scores above 50 indicating problematic use.
- **Psychological Well-Being Scale (PWBS-SDCP):** Developed by Sisodia and Choudhary (2012), this 50-item instrument measures five dimensions of PWB: Life Satisfaction, Efficiency, Sociability, Mental Health, and Interpersonal Relations. The scale boasts high internal consistency (r=0.90).
- **Self-Regulated Learning Scale (SRLS-GMMD):** Developed by Gupta and Mehtani (2017), this 48-item scale evaluates six dimensions of SRL, including self-motivation and self-control. It has a high reliability coefficient of 0.88.

Procedure

The Experimental Group participated in an 8-week MBCT intervention program. The module, developed with expert input, included mindfulness meditation, body scans, cognitive restructuring exercises, and self-awareness journals. The Control Group continued their regular academic and daily routines without specific psychological intervention. Data were collected before (pre-test) and after (post-test) the 8-week period.

RESULTS

The data were analysed using Independent Samples t-tests and Repeated Measures ANOVA to test the hypotheses regarding the impact of demographic variables and the intervention itself.

Independence of constructs

Correlation analysis was conducted to examine the relationships between the two primary dependent variables within this specific population.

Surprisingly, the analysis revealed no statistically significant correlations between PWB, and SRL in this sample ($p > .05$), the lack of significance suggests that for internet-addicted adolescents, these constructs may operate as independent domains of functioning rather than a tightly clustered syndrome.

Efficacy of MBCT on psychological well-being

The core hypothesis regarding the effectiveness of MBCT on PWB was tested using pre- and post-intervention scores. The control group showed no significant change in well-being over the 8 weeks ($p = .771$). In stark contrast, the MBCT group demonstrated a significant improvement ($p = .048$). To rigorously confirm this, a Repeated Measures ANOVA was conducted. The interaction effect between Time and Therapy was highly significant ($F(1, 118) = 23.244$, $p < .001$, $\eta p^2 = .172$). This confirms that the improvement in PWB was specifically driven by the MBCT intervention.

Efficacy of MBCT on self-regulated learning

The impact of MBCT on the cognitive capacity for self-regulation was also assessed.

While the control group's SRL scores slightly declined (indicating the persistent negative effect of internet overuse), the MBCT group showed a significant increase ($p = .028$). The ANOVA results indicated a robust interaction effect ($F(1, 118) = 43.703$, $p < .001$, $\eta p^2 = .281$). This demonstrates that MBCT had a profound effect on restoring self-regulated learning capabilities.

DISCUSSION

The results of this study provide empirical support for the integration of mindfulness practices into the developmental framework of late adolescents navigating the digital age.

Decoupling of constructs

The absence of a clear relationship between psychological well-being (PWB) and self-regulated learning (SRL) is striking. It suggests that, for adolescents who overuse the internet, these areas do not always rise or fall together. A student may appear academically organised and capable of regulating their learning while quietly experiencing emotional strain and reduced well-being. On the other hand, some adolescents may feel relatively stable emotionally but struggle to concentrate, plan, or sustain effort in their studies. This kind of “fragmentation” reflects the nature of the digital environment, where young people often separate different aspects of their functioning across online and offline spaces. As a result, interventions need to address more than one domain at a time. Mindfulness-Based Cognitive Therapy (MBCT) is particularly well suited in this context, as it works at a deeper level by strengthening attention and awareness—skills that support both emotional well-being and effective self-regulation in learning.

Restoring well-being and regulation

The robust improvement in PWB and SRL confirms that MBCT is not merely a relaxation technique but a cognitive rehabilitation tool. Internet addiction is fundamentally a disorder of "automaticity"—the mindless scrolling and compulsive checking that bypass conscious control. MBCT disrupts this automaticity. By teaching adolescents to "surf the urge" of digital craving without acting on it, MBCT strengthens the neural pathways associated with inhibition and self-control. The significant increase in SRL scores is particularly promising for educational stakeholders. It suggests that the cognitive damage wrought by the attention economy

is reversible. When adolescents learn to observe their wandering minds non-judgmentally and return focus to the present task, they are essentially retraining the "muscle" of self-regulated learning. Similarly, the improvement in PWB suggests that mindfulness helps adolescents detach their self-worth from the volatile metrics of social media likes and comments, grounding them in a more stable, internal sense of value.

CONCLUSION

This study underscores the urgent need to address the "invisible crisis" of internet overuse among Indian adolescents. The findings demonstrate that while the digital landscape poses significant risks to psychological well-being and cognitive regulation, the adolescent brain remains plastic and responsive to intervention. Mindfulness-Based Cognitive Therapy emerges not just as a clinical tool, but as a necessary pedagogical strategy for the 21st century.

By equipping adolescents with the skills to regulate their attention and emotions, we empower them to navigate the digital borderland with agency rather than addiction. The universality of the findings across gender and residence advocates for the broad implementation of mindfulness programs in Kerala's educational institutions. Future research should explore the longitudinal durability of these effects, but the immediate evidence is clear: to reclaim the psychological health of the next generation, we must teach them not just how to connect with the world, but how to reconnect with themselves.

REFERENCES

- Akin, A. (2012). The relationships between Internet addiction, subjective vitality, and subjective happiness. *Cyberpsychology, Behavior, and Social Networking*, 15(8), 404–410.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480.
- Census of India. (2011). *Population Distribution in Kerala*. Government of India.
- Erikson, E. H. (1968). *Identity: Youth and Crisis*. Norton.
- Gupta, M., & Mehtani, D. (2017). *Self-Regulated Learning Scale (SRLS-GMMD)*. National Psychological Corporation.
- Hofmann, S. G., et al. (2010). The effect of mindfulness-based therapy on anxiety and depression. *Journal of Consulting and Clinical Psychology*, 78(2), 169–183.
- Internet and Mobile Association of India (IAMAI). (2020). Digital in India Report 2019.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context. Clinical Psychology: *Science and Practice*, 10(2), 144–156.
- Kim, K., Ryu, E., Chon, M. Y., Yeun, E. J., Choi, S. Y., Seo, J. S., & Nam, B. W. (2017). Internet addiction in Korean adolescents and its relation to depression and psychological well-being. *International Journal of Nursing Studies*, 43(2), 185–192.
- Kirmayer, L. J., & Pedersen, D. (2014). Toward a new architecture for global mental health. *Transcultural Psychiatry*, 51(6), 759–776.
- Kuss, D. J., & Griffiths, M. D. (2017). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, 18(7), 4907–4916.
- Mishra, A., & Sharma, M. (2016). Internet addiction and self-regulated learning. *Journal of Educational Psychology*.
- Morahan-Martin, J., & Schumacher, P. (2000). Incidence and correlates of pathological Internet use among college students. *Computers in Human Behavior*, 16(1), 13–29.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression*. Guilford Press.
- Shaw, M., & Black, D. W. (2008). Internet addiction: Definition, assessment, epidemiology, and clinical management. *CNS Drugs,* 22(5), 353–365.
- Singh, S., Balhara, Y. P. S., & Kaur, J. (2019). Effectiveness of mindfulness-based interventions in reducing internet addiction and improving psychological well-being. *Journal of Mental Health and Human Behaviour*, 24(2), 90–97.
- Sisodia, D. S., & Choudhary, P. (2012). *Manual for Psychological Well-Being Scale*. National Psychological Corporation.
- Twenge, J. M., & Campbell, W. K. (2009). Decreases in psychological well-being among American adolescents. *Emotion*, 18(6), 765–780.
- UNFPA. (2019). *Adolescent Population Report*. United Nations Population Fund.
- Yen, J.-Y., Ko, C.-H., & Yen, C.-F. (2007). The comorbid psychiatric symptoms of Internet addiction. *Journal of Adolescent Health*, 41(1), 93–98.
- Young, K. (1996). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior*, 1(3), 237–244.
- Zimmerman, B. J. (2000). Becoming a self-regulated learner: An overview. *Theory Into Practice,* 41(2), 64–70.