



Sleep Hygiene and Digital Detox in Adolescents: Implication for Self-Esteem Development

Aradhana Kaul Kathju¹, Sandeep Saxena², Jyoti Gaur³

¹ Research Scholar, Department of Humanities and Social Sciences, Suresh Gyan Vihar University, Jagatpura, Jaipur, Rajasthan, India - 302017

³ Professor, Department of Humanities and Liberal Arts, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India - 250002

² Assistant Professor, Department of Humanities and Social Sciences, Suresh Gyan Vihar University Jagatpura, Jaipur, Rajasthan, India – 302017

Abstract- Adolescence is a critical developmental period marked by biological, psychological and social transitions. Increasing digital engagement, particularly through smartphones and social media, has significantly altered sleep patterns among adolescents worldwide. Concurrently, sleep disturbances and problematic digital use have been associated with diminished self-esteem and increased vulnerability to emotional distress. This review examines existing literature on sleep hygiene and digital detox interventions among adolescents and their impact on self-esteem. Drawing from research in developmental psychology, and digital mental health, the paper explores mechanisms linking sleep quality, digital overuse, and self-evaluative processes. The review highlights that poor sleep hygiene and excessive screen exposure negatively influence emotional regulation, cognitive functioning, and social comparison processes thereby impacting self-esteem. Evidence suggests that structured sleep hygiene practices and digital detox interventions can enhance psychological well-being, improve self-concept clarity, and promote adaptive coping. The paper concludes with implications for research, clinical practice, and educational policy.

Keywords: “Adolescents”, “Sleep Hygiene”, “Digital Detox”, “Self-esteem”, “Social Media

1. INTRODUCTION

Adolescence is a developmental epoch characterized by rapid psychological growth, neurocognitive reorganization, and socio-emotional transformation. During this period, self-esteem becomes increasingly salient as adolescents navigate identity formation, peer relationships, academic expectations, and emerging autonomy [2], [39], [12]. Self-esteem broadly conceptualized as an individual's global evaluation of self-worth, has been consistently associated with mental health outcomes, academic performance, resilience, and life satisfaction. Simultaneously, contemporary adolescents are growing up in a digital ecosystem unprecedented in scope and intensity [38]. Smartphones, social media platforms,

streaming services, online gaming, and messaging applications have become integral to daily functioning [8], [49]. While digital technologies offer opportunities for social connection and learning, their pervasive presence, particularly during evening hours, has significantly altered sleep patterns. Sleep deprivation among adolescents is now considered a global public health concern [33], [19], [11]. Reports indicate increased prevalence of delayed bedtimes, reduced total sleep duration, and poor sleep quality [44]. Multiple factors contribute to the trend, including academic pressure, extracurricular commitments, and digital media use. Of these, digital engagement is uniquely modifiable [50].

Emerging literature suggests a triadic relationship – excessive digital use disrupts sleep > poor sleep affects emotional regulation and cognitive appraisal > impaired emotional regulation contributes to diminished self-esteem

Correspondence to: Aradhana Kaul Kathju, Department of Humanities and Social Sciences, Suresh Gyan Vihar University, Jaipur
Corresponding author. E-mail addresses: aradhana.23183425@mygyanvihar.com

[11], [33]. Despite growing research in each domain independently, integrative reviews examining sleep hygiene and digital detox in relation to adolescent self-esteem remain limited [33], [40].

This paper aims to synthesize existing evidence and propose a conceptual framework linking sleep hygiene, digital detox practices, and self-esteem development in adolescents [3].

Recent empirical advancement suggest that the relationship between digital engagement, sleep disruption, and self-esteem is not merely associative but functionally interdependent [9], [30]. Digital media exposure, particularly during pre-sleep hours, delays circadian rhythms and reduces sleep quality [27], [20], [41]. In turn, sleep deprivation compromises emotional regulation, cognitive control, and stress resilience [33], [7]. These impairments cause adolescents' susceptibility to negative self-appraisal, particularly in socially evaluative contexts. Consequently, self-esteem is shaped not only by psychosocial experiences but also by biologically mediated regulatory processes, positioning sleep hygiene and digital behaviour as critical, modifiable determinants of adolescent self-worth.

II. THEORETICAL FOUNDATIONS

Development of Self-esteem in Adolescence: Self-esteem undergoes significant transformation during adolescence. Early adolescence often shows fluctuations due to heightened self-consciousness and peer comparison. Mid to late adolescence typically involves gradual stabilization as identity becomes more consolidated.

Key theoretical perspectives include:

- Erikson's Psychosocial Theory – Identity vs. role confusion stage emphasizes integration of self-concept [14].
- Socio-meter Theory – Self-esteem reflects perceived social acceptance [2].
- Social Comparison Theory – Adolescents evaluate themselves relative to peers [16].

Neurobiological maturation of the prefrontal cortex and limbic system enhances abstract thinking and self-reflection, but emotional reactivity remains heightened [3], [10]. This combination increases vulnerability to negative self-evaluations. Sleep and digital exposure intersect with these processes by influencing cognitive processing, mood regulation, and social feedback experiences [1], [43].

Sleep Hygiene – Concept and Components:- Sleep hygiene refers to behavioural and environmental practices that promote consistent and restorative sleep. Core components include (a) regular sleep-wake schedule, (b) limiting screen exposure before bedtime, (c) reducing caffeine intake, (d) creating a dark, quiet sleep environment, and (e) avoiding stimulating activities at night. Adolescents naturally

experience a delayed circadian rhythm due to biological shifts in melatonin secretion [7], [10]. However, late night screen exposure further delays sleep onset by suppressing melatonin through blue light exposure. Sleep deprivation impacts (a) emotional regulation, (b) executive functioning, (c) attention and memory, and (d) stress reactivity. These cognitive-emotional disruptions may negatively influence self-evaluative processes.

Digital Detox – Definition and Framework: Digital detox refers to intentional, structured reduction or temporary abstinence from digital device use to restore psychological balance. It may involve (a) no-screen period before bedtime, (b) social media fasts, (c) device-free days, (d) notification management, and (e) screen-time tracking. Unlike digital abstinence, detox approaches emphasize mindful, controlled use rather than elimination. Digital overuse affects adolescents through patterns like (a) social comparison, (b) cyberbullying exposure, (c) fear of missing out (FOMO), (d) disrupted sleep patterns, and (e) reduced in-person social engagement. The psychological mechanisms linking digital overuse to self-esteem include internalization of idealized standards and perceived peer evaluation [34], [48].

Sleep and Self-esteem – Mechanisms of Association

Emotional Regulation: Sleep plays a central role in emotional regulation by facilitating communication between the amygdala and prefrontal cortex. When adolescents experience sleep deprivation, amygdala reactivity increases while prefrontal regulatory control decreases. This neurobiological imbalance results in heightened emotional volatility, irritability, and increased sensitivity to perceived social threats. Adolescents who are chronically sleep-restricted may misinterpret neutral peer interactions as negative or rejecting. Over time, this pattern of distorted emotional processing can foster rumination, reinforce negative cognitive bias, and contribute to diminished self-worth and unstable self-esteem.

Cognitive Appraisal and Self-concept: Adequate sleep supports higher-order cognitive processes such as a cognitive flexibility, reflective thinking, and balanced appraisal of experiences. When well-rested, adolescents are better able to contextualize criticism, evaluate setbacks constructively, and maintain perspective about their strengths and limitations. In contrast, sleep deprivation impairs executive functioning and increases self-critical thought patterns. Adolescents may become more rigid in their thinking, interpret minor failures as global inadequacies, and struggle with self-concept clarity [21]. Empirical findings indicate that shorter sleep duration is significantly associated with lower global self-esteem scores, even after controlling for depressive symptomatology, suggesting and independent contribution of sleep to self-evaluative processes.

Correspondence to: Aradhana Kaul Kathju, Department of Humanities and Social Sciences, Suresh Gyan Vihar University, Jaipur
Corresponding author. E-mail addresses: aradhana.23183425@mygyanvihar.com

Stress and HPA Axis Dysregulation: Chronic sleep deprivation activates the hypothalamic-pituitary- adrenal (HPA) axis, resulting in elevated cortisol secretion and heightened physiological stress responses. Persistent activation of stress pathways can reduce adolescents' perceived coping capacity and sense of competence. Heightened stress sensitivity also increases vulnerability to peer rejection and social evaluation anxiety, both powerful determinants of adolescents' self-esteem. Over time, repeated stress exposure may consolidated negative self-schemas, reinforcing beliefs of inadequacy or social incompetence. Thus, sleep quality indirectly shapes self-esteem through its regulatory influence on stress physiology and emotional resilience.

Digital Overuse and Self-esteem

Social Comparison Processes: Social media environments are structured around visual presentation and curated self-disclosure, often showcasing idealized representations of appearance, achievement, and lifestyle [28]. Adolescents who are developmentally predisposed to engage in social comparison, frequently compare themselves to these amplified portrayals. Upward comparison can intensify body dissatisfaction, perceived social inferiority, and feelings of inadequacy. Repeated exposure to unrealistic standards may internalize distorted norms about success and attractiveness. Research consistently demonstrates that high-frequency social media engagement correlates with lower self-esteem, with adolescent girls particularly vulnerable due to appearance-focused comparison dynamics.

Cyberbullying and Peer Validation: Digital platforms intensify peer feedback loops by making social approval visible and quantifiable through likes, shares, and comments. Negative online reactions, including cyberbullying, exclusion from group chats, or public criticism, can have profound psychological effects [24], [30]. Such experiences often evoke shame, social anxiety, and reduced self-confidence, particularly during adolescence when peer belonging is central to identity formation. Conversely, when adolescents derive self-worth from digital validation metrics, their self-esteem may become externally contingent and unstable [42], [47]. Fluctuations in online feedback can therefore lead to parallel fluctuations in perceived self-value.

Fear of Missing Out: FOMO reflects anxiety arising from the perception that others are engaging in rewarding experiences without one's participation [35]. This phenomenon drives compulsive checking behaviours, particularly night-time hours, thereby disrupting sleep onset and continuity. FOMO has been associated with heightened anxiety, decreased life satisfaction, and lower self-esteem. Adolescents experiencing FOMO may interpret social exclusion, real or imagined, as evidence of personal inadequacy. Sleep disruption further exacerbates emotional

vulnerability, creating a cyclical relationship between anxiety, digital engagement, and diminished self-worth.

Interplay Between Sleep, Digital Use, and Self-esteem: The relationship between digital use, sleep hygiene, and self-esteem is best understood as reciprocal and cyclical rather than linear [31], [18]. Excessive digital engagement, particularly during evening hours, delays sleep onset and reduces quality. Poor sleep, in turn, impairs emotional regulation and cognitive appraisal processes [26], [50]. These impairment increase susceptibility to negative social interpretation and self-critical thinking, contributing to lowered self-esteem. Adolescents with diminished self-worth may subsequently seek reassurance or distraction through increased digital engagement, perpetuating the cycle [36]. This bidirectional model highlights the necessity of integrated, multi-level interventions rather than isolated behavioural modifications.

TABLE 1: MECHANISMS LINKING DIGITAL USE, SLEEP, AND SELF-ESTEEM

DOMAIN	MECHANISM	PSYCHOLOGICAL OUTCOME	IMPACT ON SELF-ESTEEM
Digital use	Social comparison	Body dissatisfaction	Lower self-esteem
Digital use	Cyberbullying	Social anxiety	Reduced confidence
Sleep	Emotional dysregulation	Irritability, reactivity	Negative self-evaluation
Sleep	Cognitive impairment	Rigid thinking	Poor self-concept clarity
Combined	FOMO + Sleep loss	Anxiety cycle	Unstable self-esteem

Empirical Evidence on Interventions

Sleep Hygiene Interventions: School-based sleep education programs have demonstrated measureable improvements in sleep duration, sleep regularity, and daytime alertness among adolescents [43], [5]. By teaching consistent bedtime routines, reducing pre-sleep screen exposure, and enhancing awareness of circadian rhythms, these interventions promote healthier sleep patterns [25], [6]. Improved sleep has been associated with better mood stability, enhanced concentration, and reduced irritability. Although self-esteem is not always a primary outcome measure, several studies report secondary gains in perceived competence, emotional stability, and self-concept clarity following improved sleep hygiene practices.

Digital Detox Interventions: Short term digital detox interventions, ranging from one to four weeks of reduced social media use, have shown promising psychological outcomes. Participants often report reductions in anxiety and depressive symptoms, improved mood regulation, and

enhanced overall life satisfaction [22], [24]. Importantly, voluntary digital detox programs tend to yield stronger positive outcomes compared to impose restrictions, suggesting the importance of autonomy in behavioural change. Preliminary evidence indicates modest but meaningful improvements in self-esteem, particularly when adolescents replace digital time with offline social interaction, physical activity, or reflective practices.

Integrated Programs: Integrated intervention models that combine media literacy, education, sleep hygiene workshops, mindfulness training, and emotional regulation skill-building demonstrate more robust and sustained outcomes than single-focus interventions. Media literacy components help adolescents critically evaluate online content and reduce harmful social comparison. Sleep hygiene education restores biological regulation, while mindfulness and emotional skills training enhance self-awareness and coping capacity. Together, these multi-component programs address both behavioural and cognitive-emotional mechanisms resulting in stronger improvements in well-being and self-esteem stability [43], [1].

Longitudinal and experimental studies increasingly support the directional pathways proposed in this review. For instance, Twenge et al (2019) demonstrated that adolescents engaging in more than 5 hours of daily screen time were significantly more likely to report depressive symptoms and lower self-esteem [45]. Similarly, Exelmans and Van den Bulck (2016) found that bedtime mobile phone use predicted poorer sleep quality, which subsequently mediated emotional distress [15]. Experimental digital detox interventions [22], [13], [4] revealed that reducing social media use to 30 minutes per day significantly decreased loneliness and depression while improving well-being. These findings collectively strengthen the argument that sleep and digital behaviour are not peripheral but central to adolescent psychological functioning.

TABLE 2: INTERVENTION OUTCOMES

INTERVENTION TYPE	DURATION	OUTCOMES	IMPACT ON SELF-ESTEEM
Sleep Hygiene Programs	4 – 8 weeks	Improved sleep duration	Increased emotional stability
Digital Detox	1 – 4 weeks	Reduced anxiety, Better mood	Moderate improvement
Integrated Programs	Multi-component	Holistic well-being	Strongest improvement

III. CULTURAL CONSIDERATIONS

Cultural context significantly influences sleep patterns, digital behaviour, and self-esteem development. Parental monitoring styles, academic expectations, and norms surrounding technology use vary across societies. In collectivist cultures, strong emphasis on academic achievement and family responsibility may contribute to late-

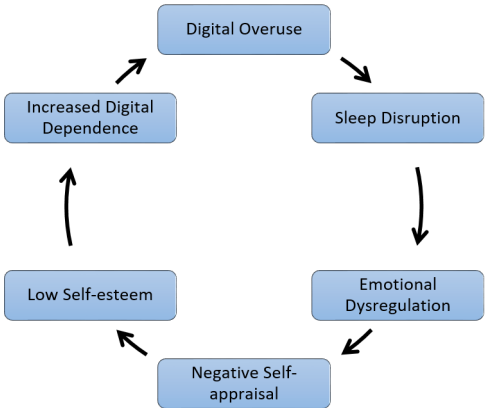
night studying and increased screen exposure for educational purposes [46], [51]. Additionally, socio-economics status influences access to private sleep environments and device ownership patterns. Despite these contextual variations, most empirical research has been conducted in Western populations. There is a pressing need for culturally grounded studies that examine how digital use and sleep hygiene interact with local norms and developmental expectations.

Methodological Gaps in Literature

Current literature on sleep, digital use, and self-esteem is limited by several methodological constraints. Many studies rely on cross-sectional designs, restricting causal inference. Self-report measures of sleep duration and screen-time introduce recall bias and social desirability effects. Longitudinal studies tracking developmental trajectories remain scarce [32], [37], [30]. Furthermore, low and middle income countries are underrepresented in empirical samples. Few studies differentiate between active digital engagement (e.g.: communication) and passive consumption (e.g.: scrolling), despite evidence suggesting differential psychological impacts. Future research should incorporate actigraphy, objective digital tracking, and longitudinal modelling to clarify causal pathways.

Proposed Conceptual Framework

The proposed conceptual model suggests a sequential pathway: Digital exposure > Sleep disruption > Emotional dysregulation > Negative self-appraisal > Reduced self-esteem. However, this pathway is moderated by several individual and contextual factors. Gender differences may influence susceptibility to appearances-based comparison. Parental monitoring may buffer digital overuse. Emotional intelligence and resilience can moderate emotional reactivity to social evaluation. Socioeconomic status shapes environmental sleep quality and access to devices. The frameworks aligns with broader developmental models of adolescent adaptation by integrating biological, cognitive, and socio-contextual influences.



Correspondence to: Aradhana Kaul Kathju, Department of Humanities and Social Sciences, Suresh Gyan Vihar University, Jaipur
 Corresponding author. E-mail addresses: aradhana.23183425@mygyanvihar.com

Figure 1: Cyclic Model of Digital Use, Sleep Disruption and Self-Esteem

The present synthesis underscores the necessity of conceptualizing adolescent self-esteem within a bio-psychosocial digital framework. Traditional models of self-esteem development have largely emphasized interpersonal and cognitive determinants, often overlooking physiological processes such as sleep regulation. However, emerging evidence suggests that sleep functions as a foundational regulatory system that influences emotional stability and cognitive appraisal. When disrupted with excessive digital engagement, particularly during biologically sensitive periods such as late evening hours, this regulatory system becomes compromised.

Furthermore, digital environments amplify evaluative pressures through constant exposure to curated identities and quantifiable social feedback. Adolescents, whose identities are still forming, are especially vulnerable to internalizing these external standards. When combined with sleep-related impairments in emotional regulation, this creates a high-risk context for unstable and contingent self-esteem.

Importantly, the cyclic nature of these relationships suggests that interventions must be multidimensional. Addressing only digital use or only sleep hygiene may yield limited outcomes. Integrating approaches that simultaneously target behavioural regulation, cognitive restructuring, and emotional awareness are more likely to produce sustainable improvements in adolescent well-being.

IV. METHODOLOGY

Research Design

The present study adopts a theoretical and integrative review design, combining elements of systematic searching with narrative and thematic synthesis. This approach enables a comprehensive examination of existing literature on sleep hygiene, digital behaviour, and adolescent self-esteem, while allowing conceptual integration across psychological, behavioural, and neurobiological domains. The review is guided by a bio-psychosocial framework, emphasizes the integration between biological regulation (sleep), behavioural patterns (digital use), psychosocial outcomes (self-esteem).

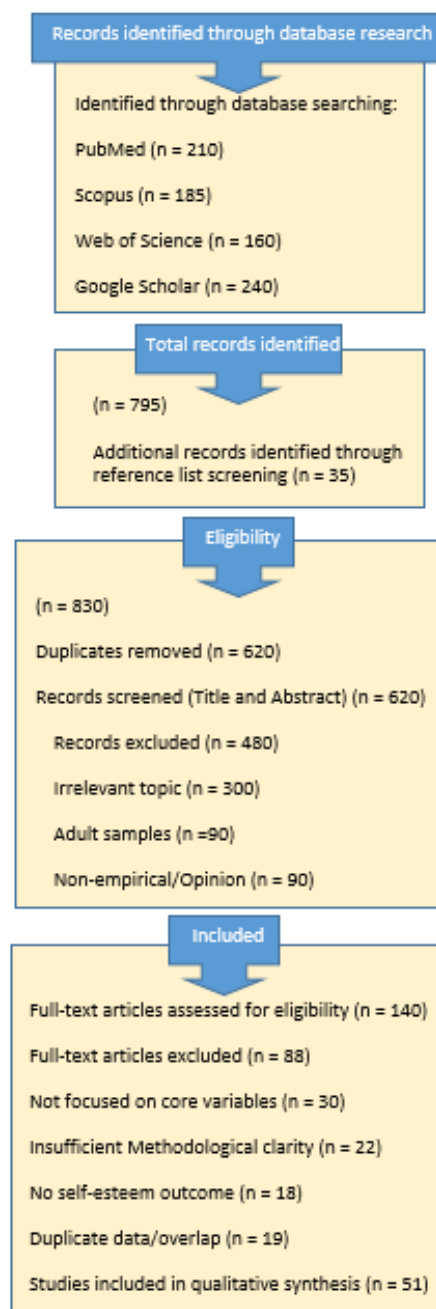


Figure 2: Prisma Flow Diagram Of Study Selection

Search Strategy

A structured literature search was conducted across multiple electronic databases, including PubMed, Scopus, Web of Science, and Google Scholar. The search covered publications from 2000-2026 (with some relevant studies from the 1950s and 60s) ensuring inclusion of both foundational and recent studies. Keywords and Boolean combinations included: adolescents, sleep hygiene, digital media use, screen-time, sleep, social media, digital detox, mental health, sleep deprivation and emotional regulation.

Reference list of selected articles were also manually screened to identify additional relevant studies (snowballing technique). Priority was given to peer-reviewed journal articles, systematic reviews, meta-analyses, and longitudinal studies.

Inclusion Criteria

Studies were met is they (a) focused on adolescents (10-19 years), (b) examined at least one of the core variables of sleep hygiene, digital media use, or self-esteem, (c) were published in peer-reviewed journals, (d) available in English, (e) employed in quantitative, qualitative, or mixed method designs, including reviews, and (f) provided empirical or theoretical insights into mechanisms or interventions.

Exclusion Criteria

Studies were excluded basis (a) samples limited to adult population or children outside the pre-set age range of 10-19 years, (b) articles lacking relevance to sleep, digital behaviour, or self-esteem, (c) non-peer-reviewed resources, editorials, opinion pieces, or blog content, (d) studies with insufficient methodological clarity, and (e) duplicate publications or studies with overlapping datasets without additional insights.

Data Extraction and Synthesis

Relevant studies were systematically reviewed and categorized based on thematic domains, including (a) sleep hygiene and physiological mechanisms, (b) digital media use and psychosocial processes, (c) interactions between sleep and digital behaviour, (d) self-esteem outcomes and developmental implications, and (e) intervention based evidence. A thematic synthesis approach was employed to identify recurring patterns, relationships, and conceptual linkages across studies. Emphasis was placed on identifying causal pathways, moderating variables, and bidirectional relationships.

V. RESULTS

Overview of Included Studies

The review synthesizes findings from 51 studies, including empirical research, systematic reviews, and theoretical papers. The majority of studies from North America and Europe, with limited representation from low and middle income countries, highlighting a geographical research gap.

Key Thematic Findings

1. **Sleep Hygiene and Psychological Functioning:** Across studies, poor sleep quality and reduced sleep duration were consistently associated with (a) impaired emotional regulation, (b) increased irritability and stress sensitivity, and (c) reduced cognitive flexibility and executive functioning. These factors contribute to negative self-

appraisal and diminished self-esteem, particularly in socially evaluative contexts.

2. **Digital Media Use and Self-evaluative Processes:** High levels of digital engagement, particularly social media use, were linked to (a) increased social comparison, (b) exposure to idealized self-presentation, and (c) greater susceptibility to cyberbullying and peer evaluation. These mechanisms were found to negatively influence self-esteem, with stronger effects observed among adolescents engaging in passive or appearance-focused media consumption.
3. **Sleep Disruption as a Mediating Mechanism:** A substantial body of evidence indicates that sleep disruption mediates the relationship between digital use and psychological outcomes. Night-time screen exposure delays circadian rhythms, reduces sleep quality, and contributes to emotional dysregulation. This pathway reinforces the indirect effect of digital behaviour on self-esteem via sleep impairment.
4. **Bi-directional and Cyclical Relationships:** Findings support a reciprocal model wherein (a) excessive digital use disrupts sleep, (b) poor sleep impairs emotional and cognitive functioning, and (c) reduced self-esteem increases reliance on digital platforms. This cyclical pattern suggests that these variables function as mutually reinforcing processes rather than isolated factors.
5. **Intervention Outcomes:** Evidence from intervention studies indicate that (a) sleep hygiene programs improve mood stability and cognitive functioning, (b) digital detox interventions reduce anxiety and depressive symptoms, and (c) integrated approaches combining sleep education, media literacy, and emotional dysregulation strategies produce the strongest improvements in self-esteem and well-being.

Summary of Findings

Overall, the findings highlight a triadic and interdependent relationship between sleep hygiene and digital behaviour, and self-esteem. Sleep functions as a central regulatory mechanism, while digital environments act as both behavioural disruptors and psychosocial amplifiers. Interventions addressing both domains simultaneously demonstrate the greatest potential for enhancing adolescent psychological outcomes.

VI. DISCUSSION

The present review highlights the interconnected roles of sleep and digital behaviour in shaping adolescent self-esteem within a rapidly evolving digital landscape. The findings suggest that sleep is not merely a restorative biological process but a critical regulator of emotional stability, cognitive functioning, and self-evaluative processes. Consistent with prior research, inadequate sleep is associated with heightened emotional reactivity, impaired executive functioning, and increased vulnerability to negative self-

appraisal [33], [11]. When compounded by expressive digital engagement, particularly during pre-sleep hours, these effects are amplified through mechanisms such as social comparison, fear of missing out (FOMO), and dependence on external validation [24], [29].

Importantly, the relationship between digital use, sleep disruption, and self-esteem appears cyclical rather than unidirectional. Adolescents experiencing lower self-esteem may engage more frequently with digital platforms for validation or distraction, further disrupting sleep patterns and reinforcing maladaptive cognitive-emotional processes [31]. This bidirectional dynamic underscores the need for integrated intervention approaches.

The review also emphasizes that interventions targeting either sleep hygiene or digital use in isolation may be insufficient. Multi-component strategies incorporating media literacy, emotional regulation, and behavioural self-monitoring demonstrate greater promise in promoting sustained improvements in well-being and self-esteem [22]. Furthermore cultural and contextual factors, particularly within Indian adolescent populations, remain underexplored and warrant focused investigation [23].

Overall the findings advocate for a bio-psychosocial approach that recognizes sleep and digital engagement as modifiable, yet deeply embedded determinants of adolescent self-esteem.

VII. IMPLICATIONS

In Research: Future research should prioritize longitudinal cohort studies to examine developmental trajectories over time. Experimental digital detox trials are necessary to establish causality and determine optimal intervention duration. Incorporating neurobiological markers, such as cortisol rhythms or neural imaging, could deepen understanding of emotional regulation pathways. Additionally, culturally grounded models are essential to contextualize findings across diverse populations and reduce overgeneralization from Western-centric samples.

Clinical Practice: Mental health professionals working with adolescents should routinely assess sleep patterns and digital habits as part of psychological evaluation. Psycho-education on digital boundaries can be integrated into therapy sessions, emphasizing autonomy and self-regulation. Cognitive restructuring techniques may help adolescents challenge distorted social comparison [34], [29]. Family-based interventions that promote consistent routines and device-free bedtime practices can strengthen treatment outcomes and support stable self-esteem development.

Education Policy: Educational systems play a critical role in shaping adolescent routines. Evidence supports later school start times to align with biological sleep rhythms. Integrating media literacy into curricula can equip students with skills to critically interpret digital content. School-wide screen-time awareness campaigns may foster healthier digital norms.

Institutional digital well-being frameworks, like incorporating teacher training, parent workshops, and student engagement programs, can provide systemic support for both sleep hygiene and psychological resilience.

VIII. CONCLUSION

Sleep hygiene and digital detox present modifiable behavioural domains with significant implications for adolescent self-esteem. Evidence indicates that poor sleep and excessive digital engagement jointly contribute to emotional dysregulation, maladaptive social comparison, and unstable self-worth. Interventions targeting sleep practices and mindful digital use demonstrate promise in enhancing psychological well-being [17]. Given the escalating digital immersion of contemporary adolescents, integrating sleep education and digital literacy within schools, families, and mental health services is imperative. Future research should adopt longitudinal, culturally sensitive approaches to better understand causal pathways and intervention efficacy.

ACKNOWLEDGEMENTS

We are deeply grateful to Dr Mukesh Gupta, Dean of Research, Suresh Gyan Vihar University, for this opportunity to contribute to the journal of Suresh Gyan Vihar University. We thank Dr Sandeep Saxena, Principal, School of Management, Suresh Gyan Vihar University, Jaipur, Rajasthan, and Dr Jyoti Gaur, Professor and HOD, Humanities and Liberal Arts, Swami Vivekanand Subharti University, Meerut, UP, for their guidance on this paper. A special acknowledgement for Dr Neeraj Kumar for guidance for formatting and presentation of the paper.

REFERENCES

- [1] Bartel, K., Gradisar, M., & Williamson, P. (2015). Protective and risk factors for adolescent sleep: A meta-analytic review. *Sleep Medicine Reviews*, 21, 72–85. <https://doi.org/10.1016/j.smrv.2014.08.002>
- [2] Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, 4(1), 1–44. <https://doi.org/10.1111/1529-1006.01431>
- [3] Blakemore, S. J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annual Review of Psychology*, 65, 187–207. <https://doi.org/10.1146/annurev-psych-010213-115202>
- [4] Billieux, J., Maurage, P., Lopez-Fernandez, O., Kuss, D. J., & Griffiths, M. D. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Current Addiction Reports*, 2(2), 156–162. <https://doi.org/10.1007/s40429-015-0054-y>

- [5] Carter, B., Rees, P., Hale, L., Bhattacharjee, D., & Paradkar, M. S. (2016). Association between portable screen-based media device access or use and sleep outcomes: A systematic review and meta-analysis. *JAMA Pediatrics*, 170(12), 1202–1208. <https://doi.org/10.1001/jamapediatrics.2016.2341>
- [6] Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Medicine*, 11(8), 735–742. <https://doi.org/10.1016/j.sleep.2010.02.006>
- [7] Carskadon, M. A. (2011). Sleep in adolescents: The perfect storm. *Pediatric Clinics of North America*, 58(3), 637–647. <https://doi.org/10.1016/j.pcl.2011.03.003>
- [8] Chassiakos, Y. L. R., Radesky, J., Christakis, D., Moreno, M. A., & Cross, C. (2016). Children and adolescents and digital media. *Pediatrics*, 138(5), e20162593. <https://doi.org/10.1542/peds.2016-2593>
- [9] Common Sense Media. (2021). *The Common Sense census: Media use by tweens and teens, 2021*. <https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-tweens-and-teens-2021>
- [10] Crowley, S. J., Wolfson, A. R., Tarokh, L., & Carskadon, M. A. (2018). An update on adolescent sleep: New evidence informing the perfect storm model. *Journal of Adolescence*, 67, 55–65. <https://doi.org/10.1016/j.adolescence.2018.06.001>
- [11] Dahl, R. E., & Lewin, D. S. (2002). Pathways to adolescent health: Sleep regulation and behavior. *Journal of Adolescent Health*, 31(6 Suppl.), 175–184. [https://doi.org/10.1016/S1054-139X\(02\)00506-2](https://doi.org/10.1016/S1054-139X(02)00506-2)
- [12] Diener, E., & Diener, M. (2009). Cross-cultural correlates of life satisfaction and self-esteem. In E. Diener (Ed.), *Culture and well-being: The collected works of Ed Diener* (pp. 71–91). Springer. https://doi.org/10.1007/978-90-481-2352-0_4
- [13] Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review. *Journal of Affective Disorders*, 207, 251–259. <https://doi.org/10.1016/j.jad.2016.08.030>
- [14] Erikson, E. H. (1968). *Identity: Youth and crisis*. W. W. Norton.
- [15] Exelmans, L., & Van den Bulck, J. (2016). Bedtime mobile phone use and sleep in adults. *Social Science & Medicine*, 148, 93–101. <https://doi.org/10.1016/j.socscimed.2015.11.037>
- [16] Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140. <https://doi.org/10.1177/00187267540070020>
- [17] Gaur, J., & Pannasamilinkara, V. (2026). Temperament and right meditation (Kammattana). *Journal of the Indian Council of Philosophical Research*. Advance online publication. <https://doi.org/10.1007/s40961-025-00369-0>
- [18] George, M. J., & Odgers, C. L. (2015). Seven fears and the science of how mobile technologies may be influencing adolescents in the digital age. *Perspectives on Psychological Science*, 10(6), 832–851. <https://doi.org/10.1177/1745691615596788>
- [19] Gradisar, M., Gardner, G., & Dohnt, H. (2011). Recent worldwide sleep patterns and problems during adolescence: A review and meta-analysis. *Sleep Medicine*, 12(2), 110–118. <https://doi.org/10.1016/j.sleep.2010.11.008>
- [20] Hale, L., & Guan, S. (2015). Screen time and sleep among school-aged children and adolescents: A systematic literature review. *Sleep Medicine Reviews*, 21, 50–58. <https://doi.org/10.1016/j.smrv.2014.07.007>
- [21] Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). Guilford Press.
- [22] Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting social media decreases loneliness and depression. *Journal of Social and Clinical Psychology*, 37(10), 751–768. <https://doi.org/10.1521/jscp.2018.37.10.751>
- [23] Kathju, A.K., Gaur, J. Rising Resilience in Indian Adolescents - A Narrative Review. *Hu Arenas* (2026). <https://doi.org/10.1007/s42087-026-00569-3>
- [24] Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, 25(1), 79–93. <https://doi.org/10.1080/02673843.2019.1590851>
- [25] LeBourgeois, M. K., Hale, L., Chang, A.-M., Akacem, L. D., Montgomery-Downs, H. E., & Buxton, O. M. (2017). Digital media and sleep in childhood and adolescence. *Pediatrics*, 140(Supplement 2), S92–S96. <https://doi.org/10.1542/peds.2016-1758J>
- [26] Levenson, J. C., Shensa, A., Sidani, J. E., Colditz, J. B., & Primack, B. A. (2016). The association between social media use and sleep disturbance among young adults. *Preventive Medicine*, 85, 36–41. <https://doi.org/10.1016/j.ypmed.2016.01.001>
- [27] Lemola, S., Perkinson-Gloor, N., Brand, S., Dewald-Kaufmann, J. F., & Grob, A. (2015). Adolescents' electronic media use at night, sleep disturbance, and depressive symptoms. *Journal of Youth and Adolescence*, 44(2), 405–418. <https://doi.org/10.1007/s10964-014-0176-x>
- [28] Marengo, D., Longobardi, C., Fabris, M. A., & Settanni, M. (2018). Highly-visual social media and internalizing symptoms in adolescence. *Computers in Human Behavior*, 82, 63–69. <https://doi.org/10.1016/j.chb.2018.01.003>
- [29] Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: Gender and popularity moderate associations with depressive symptoms. *Journal of Abnormal Child Psychology*,

- 43(8), 1427–1438. <https://doi.org/10.1007/s10802-015-0020-0>
- [30] Odgers, C. L., & Jensen, M. R. (2020). Annual Research Review: Adolescent mental health in the digital age—Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, 61(3), 336–348. <https://doi.org/10.1111/jcpp.13190>
- [31] Orben, A., & Przybylski, A. K. (2019). The association between adolescent well-being and digital technology use. *Nature Human Behaviour*, 3, 173–182. <https://doi.org/10.1038/s41562-018-0506-1>
- [32] Orben, A. (2020). Teenagers, screens and social media: A narrative review of reviews and key studies. *Social Psychiatry and Psychiatric Epidemiology*, 55(4), 407–414. <https://doi.org/10.1007/s00127-019-01825-4>
- [33] Owens, J. A. (2014). Insufficient sleep in adolescents. *Pediatrics*, 134(3), e921–e932. <https://doi.org/10.1542/peds.2014-1696>
- [34] Perloff, R. M. (2014). Social media effects on young women's body image concerns. *Sex Roles*, 71(11–12), 363–377. <https://doi.org/10.1007/s11199-014-0384-6>
- [35] Przybylski, A. K., Murayama, K., DeHaan, C., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- [36] Przybylski, A. K., & Weinstein, N. (2017). A large-scale test of the Goldilocks hypothesis: Quantifying the relations between digital-screen use and the mental well-being of adolescents. *Psychological Science*, 28(2), 204–215. <https://doi.org/10.1177/0956797616678438>
- [37] Przybylski, A. K. (2019). Digital screen time and pediatric sleep: Evidence from a preregistered cohort study. *Journal of Pediatrics*, 205, 218–223.e1. <https://doi.org/10.1016/j.jpeds.2018.09.054>
- [38] Rideout, V., & Robb, M. B. (2018). *Social media, social life: Teens reveal their experiences*. Common Sense Media. <https://www.commonsensemedia.org/research/social-media-social-life-2018>
- [39] Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- [40] Sadeh, A., Dahl, R. E., Shahar, G., & Rosenblat-Stein, S. (2009). Sleep and the transition to adolescence. *Sleep*, 32(12), 1601–1609. <https://doi.org/10.1093/sleep/32.12.1601>
- [41] Scott, H., Biello, S. M., & Woods, H. C. (2019). Social media use and adolescent sleep patterns. *Journal of Adolescence*, 67, 1–10. <https://doi.org/10.1016/j.adolescence.2018.05.008>
- [42] Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The power of the like in adolescence: Effects of peer influence on neural and behavioral responses to social media. *Psychological Science*, 27(7), 1027–1035. <https://doi.org/10.1177/0956797616645673>
- [43] Shochat, T., Cohen-Zion, M., & Tzischinsky, O. (2014). Functional consequences of inadequate sleep in adolescents: A systematic review. *Sleep Medicine Reviews*, 18(1), 75–87. <https://doi.org/10.1016/j.smrv.2013.03.005>
- [44] Tavernier, R., & Willoughby, T. (2014). A longitudinal examination of the bidirectional association between sleep problems and social ties at university: The mediating role of emotion regulation. *Journal of Youth and Adolescence*, 43(2), 317–330. <https://doi.org/10.1007/s10964-013-0013-1>
- [45] Twenge, J. M., Martin, G. N., & Spitzberg, B. H. (2019). Trends in U.S. adolescents' media use, 1976–2016: The rise of digital media, the decline of TV, and the (near) demise of print. *Journal of Adolescence*, 79, 164–174. <https://doi.org/10.1016/j.adolescence.2019.04.015>
- [46] UNICEF. (2017). *The state of the world's children 2017: Children in a digital world*. <https://www.unicef.org/reports/state-of-worlds-children-2017>
- [47] Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and adolescents' self-esteem and well-being. *CyberPsychology & Behavior*, 9(5), 584–590. <https://doi.org/10.1089/cpb.2006.9.584>
- [48] Valkenburg, P. M., Beyens, I., Pouwels, J. L., van Driel, I. I., & Keijsers, L. (2021). Social media use and adolescents' self-esteem: Heading for a person-specific media effects paradigm. *Journal of Communication*, 71(1), 56–78. <https://doi.org/10.1093/joc/jqaa039>
- [49] van der Schuur, W. A., Baumgartner, S. E., Sumter, S. R., & Valkenburg, P. M. (2015). The consequences of media multitasking for youth: A review. *Computers in Human Behavior*, 53, 204–215. <https://doi.org/10.1016/j.chb.2015.06.035>
- [50] Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence*, 51, 41–49. <https://doi.org/10.1016/j.adolescence.2016.05.008>
- [51] World Health Organization. (2021). *Adolescent mental health*. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>