

Review Article



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"DIGITAL ADDICTION AND SCREEN-RELATED MENTAL HEALTH PROBLEMS: AN AYURVEDIC AND YOGIC PREVENTIVE FRAMEWORK"

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ABSTRACT:

Background: Smartphones, social media and online gaming have transformed daily life. Problematic use, including gaming disorder now recognised in ICD-11, has been linked to poor sleep, anxiety, depression, attention problems and eye strain, particularly in young people. Prevention needs approaches that are practical, culturally acceptable and sustainable.

Objective: To review the evidence on problematic digital technology use and its mental health correlates, and to propose a preventive framework based on Ayurvedic and Yogic principles. **Methods:** Narrative review of classical Ayurvedic concepts of sensory overuse, daily routine and mental hygiene, and of epidemiological, experimental and intervention studies on screen use, gaming disorder, sleep and wellbeing. **Results:** Ayurveda identifies the improper use of the senses (Asatmya Indriyarth Samyoga), including excessive (Atiyoga) and wrong (Mithyayoga) use, as one of the three root causes of disease, and lists faculties such as restraint (Dhriti) whose weakening leads to harmful habits. Modern studies estimate the global prevalence of gaming disorder at around 3%; heavy screen use is associated with shorter and poorer sleep, and evening light-emitting devices delay circadian timing. Associations between screen time and wellbeing in adolescents are consistent but generally small. Limiting social media use reduced loneliness and depression in an experimental study. Ayurvedic routines (Dinacharya, Ratricharya), sense discipline and Yogic practices (Pratyahara, Pranayama, meditation) map onto evidence-based strategies of sleep protection, stimulus control and mindfulness. **Conclusion:** Ayurveda and Yoga provide a coherent, culturally rooted framework for healthy digital habits. Its components should be developed into structured programmes and evaluated in controlled trials, especially in schools and colleges.

Keywords: digital addiction; gaming disorder; screen time; sleep; Asatmya Indriyarth Samyoga; Pratyahara; Dinacharya; adolescents

INTRODUCTION:

Digital devices have become central to education, work, communication and entertainment. For most people this brings clear benefits, but for some, use becomes excessive and difficult to control, leading to distress and impairment. The World Health Organization included gaming disorder in the eleventh revision of the International Classification of Diseases (ICD-11), defining it as a pattern of gaming with impaired control, increasing priority over other activities, and continuation despite negative consequences^[1]. A meta-analysis estimated the global prevalence of gaming disorder at about 3%^[2]. Broader problematic internet use, including excessive social media use, is not a formal diagnosis but is widely studied.

Screen-related mental health concerns extend beyond addiction. Heavy screen use has been associated with poor sleep^[3], and evening exposure to light from devices affects circadian timing^[4]. Associations with depression, anxiety and attention problems have been reported, although many are small and their causal direction is uncertain^[5-7]. Researchers have also raised questions about how constant online engagement may affect attention, memory and social cognition^[8].

Ayurveda and Yoga did not anticipate digital technology, but they developed detailed principles about the use and misuse of the senses, the regulation of daily routine and the training of the mind. This review summarises current evidence on screen-related problems and proposes how these classical principles can be used to build a preventive framework.

METHODS:

Classical sources included Charaka Samhita (Sutra Sthana 5, 7, 8, 11 and 21; Sharira Sthana 1) and Patanjali's Yoga Sutrash^[9,10]. Modern literature was identified through PubMed and Google Scholar using gaming disorder, internet addiction, problematic smartphone use, screen time, social media, sleep, wellbeing, depression, attention and digital eye strain. Priority was given to systematic reviews, meta-analyses, large population studies and experiments. This is a narrative review.

CLASSICAL CONCEPTS RELEVANT TO DIGITAL OVERUSE:

Asatmya Indriyarthā Samyoga

Charaka identifies three root causes of disease: improper contact of the senses with their objects (Asatmya Indriyarthā Samyoga), Prajnaparadha, and the effects of time (Parinama)^[9]. Improper contact is of three kinds: excessive use (Atiyoga), insufficient use (Ayoga) and wrong use (Mithayoga). For the eyes, Charaka gives examples such as gazing at very bright objects excessively, or looking at objects that are too close, too distant, too small or otherwise improper^[9]. For the ears, examples include exposure to very loud or harsh sounds.

These descriptions apply strikingly well to modern screen use: prolonged close-up viewing of bright screens, rapid visual stimulation, headphone use at high volume and constant sensory input. In Ayurvedic terms, such patterns aggravate Vata and Pitta, disturb sleep and agitate the mind.

Prajnaparadha and weakened restraint

Charaka defines Prajnaparadha as the impairment of intellect (Dhi), restraint (Dhriti) and memory (Smriti) that leads a person to act against their own interest^[9]. Dhriti, the ability to restrain the mind from harmful objects, is particularly relevant to

compulsive digital use, where people continue to scroll or play despite knowing that it harms sleep, study or relationships. This closely parallels the impaired control that defines gaming disorder^[1].

Rajas and Tamas

Constant stimulation, novelty seeking and restlessness are characteristic of Rajas, while passive, prolonged consumption with lethargy and social withdrawal resemble Tamas. Ayurveda would predict that heavy digital use increases both, displacing the clarity and balance of Sattva.

Sleep and daily routine

Ayurveda places sleep among the three supports of life and regards night waking (Ratri Jagarana) as harmful^[9]. Dinacharya prescribes waking early, regular meals, physical activity, and an early, calm evening. Late-night screen use directly conflicts with these principles.

Yogic sense discipline

Patanjali's eight-limbed Yoga includes Pratyahara, the withdrawal of the senses from their objects, as a step between breath regulation (Pranayama) and concentration (Dharana)^[10]. Pratyahara can be seen as a training in voluntary control over sensory engagement, the very capacity that is weakened in compulsive digital use.

MODERN EVIDENCE ON SCREEN-RELATED MENTAL HEALTH PROBLEMS:

Gaming disorder and problematic use

The meta-analysis of gaming disorder prevalence, including over 50 studies, estimated a pooled prevalence of about 3%, with higher rates in adolescent males^[2]. A meta-analysis across 31 nations reported that internet addiction prevalence varied widely between regions and was inversely related to quality of life indicators^[11].

Sleep

A systematic review found that screen time was adversely associated with sleep outcomes, mainly delayed bedtime and reduced total sleep time, in about 90% of the studies reviewed in children and adolescents^[3]. In a controlled laboratory study, reading on a light-emitting e-reader before bed, compared with a printed book, prolonged the time taken to fall asleep, delayed the circadian clock, suppressed melatonin and reduced next-morning alertness^[4].

Wellbeing, depression and anxiety

Large population studies have found that heavier screen use in children and adolescents is associated with lower psychological wellbeing, more anxiety and depression diagnoses, and lower curiosity and self-control^[5]. However, a large analysis using specification curve methods found that the association between digital technology use and adolescent wellbeing, while negative, was very small, comparable in size to the association with eating potatoes^[6]. This suggests that average effects are small, while some individuals and patterns of use may be more harmful.

Attention

In a prospective study of adolescents, more frequent use of digital media was associated with a modest but significant increase in the odds of later ADHD symptoms^[7].

Experimental reduction of social media

In a randomised experiment among university students, limiting social media use to about 30 minutes per day for three weeks led

to significant reductions in loneliness and depression compared with usual use^[12]. This is one of the few experimental studies showing that reducing use can improve mental health.

Eye strain

Digital eye strain, with symptoms such as eye discomfort,

dryness, blurred vision and headache, is common among people using screens for long periods^[13]. It is a physical counterpart of the Ayurvedic concept of excessive and improper use of the eyes.

Table 1: Summary of evidence on screen-related mental health problems

Domain	Key evidence	Strength of association
Gaming disorder	~3% global prevalence ^[2] ; ICD-11 diagnosis ^[1]	Established entity
Sleep	Delayed bedtime, shorter sleep ^[3] ; evening device light delays circadian clock ^[4]	Consistent
Wellbeing	Lower wellbeing with heavy use ^[5] ; small average effect ^[6]	Small on average
Attention	Later ADHD symptoms with frequent use ^[7]	Modest
Loneliness and depression	Reduction after limiting social media ^[12]	Experimental, single study
Eye strain	Common with prolonged use ^[13]	Consistent

AN AYURVEDIC AND YOGIC PREVENTIVE FRAMEWORK:

Drawing on classical principles and modern evidence, the following framework is proposed. It is organised around the three classical causes of disease and the Yogic path of sense discipline.

1. Correct use of the senses (avoiding Atiyoga and Mithyayoga)

- Set daily limits for recreational screen time, with screen-free periods during meals and the first and last hour of the day.
- Follow the 20-20-20 practice for the eyes (every 20 minutes, look at something 20 feet away for 20 seconds), and keep screens at an appropriate distance and brightness.
- Avoid high headphone volume and prolonged continuous use.
- In Ayurvedic practice, eye care measures such as washing the eyes with cool water and gentle eye exercises can be included.

2. Strengthening Dhriti and avoiding Prajnaparadha

- Use personal rules and implementation intentions (“if I finish dinner, I will put my phone in another room”), a strategy with meta-analytic support for goal attainment^[14].
- Turn off non-essential notifications and remove the most compulsive applications from the home screen.
- Use Sattvavajaya principles: increasing knowledge

(understanding how apps are designed to capture attention), courage (tolerating boredom), memory (recalling the costs of overuse) and concentration.

3. Protecting Kala: sleep and daily rhythm

- Keep regular sleep and wake times in line with Dinacharya.
- Stop screen use at least an hour before bed and keep devices out of the bedroom.
- Use a calming evening routine, such as foot or head massage with warm oil, warm milk and light reading.

4. Yogic practices for sense and mind regulation

- **Pranayama:** slow breathing practices such as Nadi Shodhana and Bhramari to reduce arousal.
- **Pratyahara:** brief daily practices of sensory withdrawal, such as sitting with closed eyes and attending to internal sensations.
- **Dharana and Dhyana:** concentration and meditation practices to train sustained attention; mindfulness-based therapies have moderate effects on anxiety and depression^[15].
- **Asana and outdoor activity:** physical activity to counter sedentary screen use.

5. Restoring Sattva through social and natural engagement

- Encourage face-to-face social activity, community service and time in nature.
- Promote Sattvika diet and avoid using screens while eating.

Table 2: Summary of the Ayurvedic and Yogic preventive framework

Classical principle	Practical measure	Modern parallel
Avoid Atiyoga of senses	Daily screen limits; 20-20-20 rule	Screen-time guidelines; digital eye strain prevention
Strengthen Dhriti	Personal rules; notification control	Self-regulation, implementation intentions
Dinacharya, Ratricharya	No screens before bed; regular sleep	Sleep hygiene; circadian protection
Pratyahara, Dhyana	Sensory withdrawal and meditation practice	Mindfulness-based interventions

Classical principle	Practical measure	Modern parallel
Sattva promotion	Social, outdoor and service activities	Behavioural activation, social connection

Dosha-specific patterns of digital overuse

Ayurvedic practitioners can use constitutional assessment to tailor advice, since people engage with technology in different

ways. The patterns below are clinical observations offered as hypotheses for research rather than established findings.

Table 3: Dosha-specific patterns of digital overuse

Pattern	Typical features	Emphasis of advice
Vata type	Restless switching between apps, late-night use, anxiety, poor sleep, scattered attention	Firm routine, early bedtime, warm oil massage, grounding practices, single-tasking
Pitta type	Intense gaming or work use, competitiveness, irritability, eye strain, headaches	Cooling practices, breaks for the eyes, avoidance of competitive late-night gaming, Shitali Pranayama
Kapha type	Prolonged passive scrolling or streaming, sedentary behaviour, lethargy, weight gain, low mood	Physical activity, morning routine, time limits on passive use, social and outdoor engagement

Tailored advice of this kind may improve engagement, because people are more likely to follow guidance that matches their experience. Whether Dosha-based tailoring improves outcomes compared with general advice is a testable research question.

APPLYING THE FRAMEWORK:

Schools and colleges

Schools and colleges are natural settings for prevention. A short programme could combine education about healthy digital use, daily yoga and breathing sessions, a family agreement on device use at home, and monitoring of sleep and wellbeing. Ayurveda colleges could pilot such programmes among their own students.

Clinical practice

Ayurveda practitioners can ask about screen use as part of routine history-taking, particularly in patients with insomnia, anxiety, headache, eye strain, digestive problems or poor concentration. Advice on screen habits can be integrated with Dosha-specific recommendations. Patients with features of gaming disorder or severe problematic use, especially with depression, anxiety or suicidal thoughts, should be referred for specialist assessment.

Families

Children model their parents' behaviour. Family-wide routines, such as shared screen-free meals and evening hours, are likely to be more effective than rules applied only to children.

DISCUSSION:

The concerns raised by digital technology are new, but the underlying problems, overstimulation of the senses, loss of restraint and disruption of sleep and routine, are ones that Ayurveda and Yoga addressed in detail. Their concepts of Asatmya Indriyarthā Samyoga, Prajnaparadha and Pratyahara provide a vocabulary that is culturally familiar to Indian families and students and that maps closely onto modern evidence-based strategies.

The modern evidence must be interpreted carefully. Gaming disorder is a recognised condition but affects a minority. The average association between screen time and wellbeing is small^[6], and much of the evidence is cross-sectional. Some patterns of use, such as late-night use, passive social media

scrolling and use that displaces sleep and activity, appear more harmful than others. A balanced approach focuses on these patterns rather than demonising technology, which is essential for education and work.

There is a clear need for intervention research. To the authors' knowledge, no controlled trial has tested an Ayurveda-based digital wellbeing programme. Future studies could compare a structured programme combining Dinacharya, yoga and sense discipline with a standard digital literacy programme in students, using outcomes such as sleep quality, problematic use scales, wellbeing and academic performance.

CONCLUSION:

Digital overuse and its mental health effects can be understood in Ayurveda as improper use of the senses, weakened restraint and disrupted routine. Ayurveda and Yoga offer practical, culturally rooted measures, including daily routine, sleep protection, sense discipline, breathing and meditation, that align with evidence-based approaches. These measures should be developed into structured programmes and tested in schools, colleges and clinics.

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