

DIGITAL ADDICTION IN PAEDIATRIC POPULATION: AYURVEDIC APPROACH TOWARDS MANAGEMENT

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ABSTRACT

Digital addiction has become an increasing concern amongst all, especially children and adolescents manifesting an unhealthy dependence on smartphones, video games, and other online media. This addiction significantly affect physical health, emotional stability, and social development in children. Although there are some modern, also the conventional approaches to manage digital addiction such as app restriction, Ayurveda offers a holistic framework that can be effectively applied to pediatric care as well help in physical and mental care of children. This review explores the types, signs, and effects of digital addiction in children and outlines Ayurvedic treatment approaches, modern management strategies, and integrative solutions for addressing this challenge.

KEYWORDS: Digital Addiction, Paediatric Population, Ayurvedic Treatment, Screen Time Management, Holistic Health.

INTRODUCTION

Digital addiction refers to a harmful dependence on online screen devices such as smartphones, laptops, video games and other mediums. Its impact affect life of all age groups but is severe in children due to sensitive brain and inexperience. Overuse of screen time alters brain chemistry, similar to substance abuse.^[1] With increased access to high-tech devices, the consequences of digital overuse manifest in behavioral, emotional, and physical disorders.^[2] Ayurveda, with its principles of balance and holistic living, provides effective preventive and curative strategies.^[3]

A TYPES OF DIGITAL ADDICTION IN CHILDREN

1. CYBERSEX ADDICTION

Adolescents may engage in online activities such as viewing pornography or forming online relationships, which harm mental health, social skills and behavior.^[4]

2. ONLINE GAMING ADDICTION

Excessive gaming disrupts sleep, academic performance, focus & mental concentration, also affect eyes, disturbed metabolism due to long time sitting, Spinal issues and scattered family dynamics.^[5]

3. NET COMPULSIONS

Compulsive behaviors such as online shopping or gambling lead to neglect of responsibilities, social gatherings and social isolation.^[6]

4. SOCIAL MEDIA ADDICTION

Social media platforms create compulsive usage patterns, impacting self-esteem and contributing to social anxiety or withdrawal, disturb social behavior.^[7]

B SIGNS AND SYMPTOMS OF DIGITAL ADDICTION IN CHILDREN

1. BEHAVIORAL SYMPTOMS

- Prioritization of digital over real-life interactions.^[8]
- Difficulty following daily routines due to excessive screen use and less discipline.^[9]
- Irritability or mood swings when restricted from devices.^[10]

2. PHYSICAL SYMPTOMS

- Sleep disturbances such as insomnia or excessive sleepiness due to blue light exposure.^[11]
- Chronic eye strain, Dry eye syndrome, headaches, or blurred vision caused by prolonged screen use.^[12]
- Sedentary lifestyles resulting in weight changes and musculoskeletal issues.^[13]

3. EMOTIONAL SYMPTOMS

- a. Anxious behavior, depression, or frustration when not online.^[14]
- b. Difficulty forming meaningful face-to-face connections.^[15]

C EFFECTS OF DIGITAL ADDICTION ON CHILDREN

1. PHYSICAL EFFECTS

- Chronic pain in the neck, back, or wrists due to poor posture while using devices.^[16]
- Obesity or unbalanced weight due to lack of physical activity.

2. EMOTIONAL AND SOCIAL EFFECTS

- Social isolation caused by excessive digital device interactions over in-person ones
- Increased irritability and aggression, particularly when restricted from using devices.

3. WITHDRAWAL SYMPTOMS

- Anxiety, difficulty concentrating, and emotional outbursts when attempting to reduce screen time.

D MODERN MANAGEMENT OF DIGITAL ADDICTION

1. BEHAVIORAL THERAPY

- Cognitive Behavioral Therapy (CBT) identifies and alters harmful thought patterns related to screen use.^[17]
- Motivational Interviewing (MI) enhances children's readiness to change their habits.

2. PARENTAL aid Establishing screen time rules and modeling healthy device use is crucial.

Regular family digital detox routines can reduce dependency.

3. TECHNOLOGICAL AIDS

- Use of screen time tracking apps, parental controls, and device-free zones.^[18]

4. PHYSICAL ACTIVITIES

- Encourage children to participate in outdoor sports or creative hobbies as alternatives to screen time.

E DISCUSSION

AYURVEDIC PERSPECTIVE ON DIGITAL ADDICTION IN CHILDREN

Digital addiction is viewed in Ayurveda as an imbalance of the doshas, particularly **Vata** (**vyaan vayu**) and **Pitta** (**aalochak pitta**), caused by atiyog and mithya yog of indriyas means overstimulation of the senses, ayog or sedentary habits, and mental strain.

Digital addiction leads to misuse of senses (Heena, Mithya, Atiyoga), causing Vata-Pitta imbalance, Dhatu depletion, Agni disturbance, and Ama formation. This results in various physical, mental, and emotional disorders among children and adolescents. Preventive measures include regulated screen time, outdoor activities, balanced lifestyle, and following Dinacharya practices.

Concept: Asatmya-Indriya-Sannikarsha (Improper Use of Senses)

Digital addiction is a modern example of improper sensory engagement leading to disorders through wrong, excessive, or insufficient use of senses.

In ayurvedic classic texts three ways are described, which are responsible for the pathogenesis of any disease, as already mentioned above the heen, mithya and atiyog of senses in reference to time, object and action,^[19] pragyaparadha, asatmyaindriyarth sanyog and parinam are three reasons for diseases to be happen and heen, mithya, atiyog are the types of asatmya Indriyarth sannikarsh or sanyog.^[20] It manifests mainly in two ways.

1. Mithya Upayoga (Misuse)

- Definition: Wrong or inappropriate engagement of senses.
- Example: Watching violent or inappropriate digital content.
- Result: Fear, aggression, emotional instability.

2. Atiyoga (Overuse)

- Definition: Excessive stimulation of senses.
- Example: Hours of continuous gaming, binge-watching videos.
- Result: Eye strain, mental fatigue, insomnia.

Pathological Components (Samprapti Ghatakas)

- Dosha: Vata (Vyana Vayu) and Pitta (Alochaka Pitta) aggravation.
- Dhatu (Tissues): Weakening of Rasa (plasma), Rakta (blood), Mamsa (muscle), Majja (nerve).
- Strotodushti (Channel damage): Blood and nerve channels affected.
- Agni (Digestive/metabolic fire): Vishama (irregular) Agni.
- Ama (Toxins): Accumulation of metabolic waste.
- Sanchara Sthana (Sites of circulation): Eyes (Akshi), Brain (Mastishka), Heart (Hridaya).
- Adhithana (Seat of manifestation): Head (Shiras), Heart (Hridaya), Brain (Mastishka).

Effects

A. Eyes (Akshi)

- Symptoms: Eye strain, dryness, redness, blurred vision.
- Example: Child requiring spectacles at age 10 due to prolonged tablet use.

B. Brain (Mastishka)

- Symptoms: Attention deficit, poor memory, sleep disturbances, anxiety.
- Example: Child becoming irritable when restricted from screen use.

C. Body (Sharira)

- Symptoms: Physical exhaustion, poor posture ("text neck"), musculoskeletal pain, weak digestion, lethargy.

TREATMENT

Nidan parivarjan is the first and foremost thing to start with any treatment, means to stop the ongoing cause.

Also, Ayurveda incorporates **Dinacharya** (daily routine) to structure a child's day, ensuring balance between screen time and physical activities and mental well-being of kumar (child). Techniques such as **Satvavajaya Chikitsa** (mind control therapy, Cognitive behavioural therapy) focus on enhancing mental resilience and reducing compulsive behaviors.

Practicing yoga, pranayama, and meditation are pivotal, offering both physical rejuvenation and emotional Behaviour of kumar.

Ayurvedic detoxification therapies, including **Panchakarma therapies and procedures** such as Sarvang abhyanga, padabhyang, nasya, basti, shirodhara, helps eliminate accumulated toxins that disrupt mental and physical health.

Rasayan chikitsa – Regular intake of Chyawanprash and Brahmrasayan.

Herbal medhya dravya like **Brahmi**, **Ashwagandha**, and **Shankhpushpi**, jatamansi, jyotishmati acts as natural adaptogens, enhancing cognitive function, reducing stress, and calming the mind.

Moreover, Ayurveda emphasizes outdoor activities, indoor physical activities and social interactions to boost mental well-being. By integrating these practices, Ayurveda not only

manages digital addiction but also lays the foundation for sustainable, balanced living with emphasizes good mental and physical growth of child.

- **DINACHARYA (DAILY ROUTINE)**

- Structured routines with clear time allocations for outdoor play, meals, and study help reduce reliance on devices.^[21]

1. **SADVRITTA (ETHICAL CONDUCT)**

Promotes ethical and mindful habits, ensuring moderation in screen use.^[22]

2. **YOGA AND PRANAYAMA**

Yoga asanas like Tadasana and breathing exercises like Nadi Shodhana improve focus and calm the mind.^[23]

3. **PANCHAKARMA**

Therapies such as Abhyanga (oil massage) and Nasya (nasal detox) detoxify and balance the body.^[24]

4. **HERBAL REMEDIES**

Herbs like Brahmi and Ashwagandha enhance cognitive function and reduce stress (Charaka Samhita, Ch. 30)^[25]

5. **Preventive Measures for चक्षुरेन्द्रिय**

- उप: पान
- मुख एवं नेत्र प्रक्षालन
- अंजन
- आचमन
- पादाभ्यंग
- पादत्राण धारण
- पाद प्रक्षालन
- छत्रधारण
- नस्य

- योग practice for relavent आसन
- षटकर्म Procedure (नेति, त्राटक आदि)

DOPAMINE'S ROLE IN DIGITAL ADDICTION

Digital addiction is fundamentally linked to the brain's dopamine-driven reward system. Engaging in activities like online gaming, social media, and video streaming triggers a surge of dopamine which is temporary, creating feelings of pleasure and reinforcing repetitive behaviors. Features such as instant feedback, rewards, and notifications amplify this reward loop, fostering compulsive use. Over time, sustained overexposure desensitizes dopamine receptors, leading to reduced satisfaction and a need for prolonged engagement, a phenomenon resembling substance addiction.

In children and adolescents, whose brains are still developing, this cycle disrupts attention, emotional regulation, and impulse control, exacerbating dependency. Modern interventions focus on behavioral strategies like cognitive-behavioral therapy (CBT) and controlled screen usage to mitigate the effects of this dysregulation. By understanding dopamine's role, practitioners can devise integrative approaches that address both neurological and behavioral dimensions of digital addiction.

CONCLUSION

Digital addiction affects children's mental, emotional, and physical health. By integrating modern strategies like behavioral therapy and parental guidance with Ayurveda's holistic approach, healthcare providers can ensure a balanced mental, physical and social behaviour solution to this emerging challenge.

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