

# Mobile Gaming Disorder, Anxiety and Nidra Veg Dharan: An Integrative Ayurvedic and Modern Review Article

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**Abstract**—The widespread use of smartphones and affordable internet access has significantly increased the popularity of mobile gaming, especially among adolescents and young adults. Although gaming is commonly used for recreation and stress relief, excessive involvement may gradually progress into problematic or addictive behavior associated with emotional disturbances, anxiety, impaired social functioning, and sleep disruption. In recent years, Gaming Disorder has gained global clinical attention due to its psychological and behavioral consequences.

Ayurveda considers Nidra (sleep) as one of the essential pillars responsible for maintaining physical vitality, mental stability, cognitive efficiency, and emotional balance. Disturbance or suppression of natural sleep patterns, described as Nidra Vega Dharan, leads to symptoms such as lethargy, drowsiness, heaviness of head and eyes, body ache, irritability, and impaired concentration. These manifestations resemble many complaints observed in individuals with excessive gaming habits.

The present review article critically analyzes the relationship between mobile gaming disorder, anxiety, emotional dysregulation, and sleep disturbance from both Ayurvedic and contemporary scientific viewpoints. Modern evidence suggests that prolonged gaming exposure affects circadian rhythm, dopamine-mediated reward pathways, emotional processing, and autonomic regulation, thereby contributing to anxiety and disturbed sleep quality. Ayurvedic concepts such as Ratnaprabha, Raja-Tama predominance, Vata aggravation, and Manovaha Srotodushti provide a holistic framework for understanding these psychological disturbances.

This review also highlights the role of behavioral interventions, sleep hygiene, Yoga, meditation, Satavahana Chikitsa, and lifestyle modification in the prevention and management of gaming-related mental health disorders. An integrative approach combining Ayurvedic wisdom with modern psychological understanding may offer effective strategies for restoring emotional and sleep health.

**Index Terms**—Mobile Gaming Disorder, Internet Gaming Disorder, Anxiety, Nidra Vega Dharan, Sleep Disturbance, Emotional Dysregulation, Ayurveda, Behavioral Addiction, Mental Health, Satvavajaya Chikitsa.

## I. INTRODUCTION

Digital technology has transformed modern human life by improving communication, entertainment, education, and accessibility to information. Among various digital activities, mobile gaming has become one of the most rapidly expanding recreational behaviors globally. Online multiplayer games, reward-based gaming systems, social interaction features, and easy smartphone accessibility have contributed to prolonged gaming engagement among adolescents and young adults.

Although gaming may provide temporary entertainment and stress relief, excessive and uncontrolled gaming behavior has emerged as a significant psychological and behavioral health issue. Internet Gaming Disorder (IGD), now termed Gaming Disorder, has been officially recognized by the World Health Organization in the International Classification

of Diseases, 11th Revision (ICD-11). Gaming disorder is characterized by impaired control over gaming, increasing priority given to gaming over daily activities, and continuation of gaming despite negative personal, social, educational, or occupational consequences.

Excessive gaming behavior is strongly associated with emotional dysregulation, anxiety, stress, irritability, depression, poor impulse control, social withdrawal, disturbed sleep, reduced academic performance, and impaired interpersonal relationships. Among these complications, sleep disturbance is one of the most common and clinically significant consequences.

Ayurveda, the ancient science of life, gives immense importance to Nidra (sleep) as one of the three pillars of life along with Ahara and Brahmacharya. Proper sleep is essential for physical growth, mental stability, immunity, cognition, happiness, and longevity. Disturbance or suppression of natural sleep urge is termed Nidra Vega Dharan, which results in multiple physical and psychological symptoms.

The increasing prevalence of mobile gaming addiction and its close association with anxiety and sleep disturbance indicates a strong conceptual relationship with Ayurvedic descriptions of Nidra Vega Dharan. Therefore, understanding gaming disorder through both Ayurvedic and modern perspectives may provide a holistic framework for prevention and management.

#### Aim

To critically review the effect of mobile gaming disorder on emotions, particularly anxiety, with special reference to Nidra Vega Dharan.

#### Objectives

##### Primary Objective

- To study the relationship between mobile gaming disorder and emotional disturbances, especially anxiety, with reference to Nidra Vega Dharan.

##### Secondary Objectives

1. To review Ayurvedic concepts of Nidra and Nidra Vega Dharan.
2. To study modern scientific concepts related to gaming disorder.
3. To understand the neurobiological basis of gaming addiction and anxiety.
4. To explore the role of sleep deprivation in emotional dysregulation.

5. To identify preventive and therapeutic approaches from Ayurvedic and modern perspectives.

## II. CONCEPT OF NIDRA IN AYURVEDA

Ayurveda considers Nidra as one of the fundamental supports of life.

#### Definition of Nidra

Acharya Charaka explains Nidra as a natural physiological state that nourishes the body and mind. “त्रय उपस्तंभा इति- आहारः स्वप्नो ब्रह्मचर्यमिति।”

According to Ayurveda, Ahara (diet), Nidra (sleep), and Brahmacharya are the three pillars that sustain life.

#### Importance of Nidra

“निद्रायत्तं सुखं दुःखं पुष्टिः काशर्यबलाबलम् ।  
वृषता क्लैब्यतां ज्ञानमज्ञानं जीवितं न च ॥”

Proper sleep is responsible for happiness, nourishment, strength, intellect, fertility, immunity, and longevity, whereas disturbed sleep leads to disease and suffering.

## III. PHYSIOLOGICAL IMPORTANCE OF SLEEP

#### Physical Functions

- Restoration of body tissues
- Hormonal balance
- Immune regulation
- Energy conservation
- Cellular repair

#### Psychological Functions

- Emotional stability
- Memory consolidation
- Cognitive performance
- Stress reduction
- Behavioral regulation

#### Nidra Vega Dharan

Suppression of natural sleep urge is known as Nidra Vega Dharan.

#### Symptoms of Nidra Vega Dharan

“निद्राया मोहमूर्धाक्षिगौरवालस्यजृम्भिकाः ।  
अंगमर्दश्च तत्रैवः स्वप्नः संवाहनानि ॥”

#### Clinical Manifestations

- Jrumbha (excessive yawning)
- Tandra (drowsiness)
- Alasya (lethargy)
- Angamarda (body ache)
- Shiroruja (headache)
- Akshi Gaurava (heaviness of eyes)
- Moha (confusion)
- Reduced concentration
- Emotional irritability
- Fatigue

These manifestations closely resemble symptoms observed in individuals with excessive mobile gaming behavior and sleep deprivation.

#### IV. MODERN CONCEPT OF SLEEP

Sleep is a reversible physiological state characterized by reduced responsiveness and decreased motor activity. It is essential for maintaining cognitive, emotional, metabolic, and neurological health.

##### Physiology of Sleep

Sleep is regulated by:

1. Circadian rhythm
2. Homeostatic sleep drive
3. Neurotransmitter systems
4. Hormonal regulation

##### Important Brain Structures

- Hypothalamus
- Suprachiasmatic nucleus
- Brainstem
- Pineal gland
- Thalamus

##### Important Neurotransmitters

- Melatonin
- Serotonin
- Dopamine
- GABA
- Orexin

##### Stages of Sleep

###### Non-REM Sleep

- Stage N1
- Stage N2
- Stage N3 (deep sleep)

##### REM Sleep

Associated with dreaming, emotional processing, and memory consolidation.

#### V. MOBILE GAMING DISORDER

##### Definition

Gaming disorder is characterized by persistent or recurrent gaming behavior resulting in significant impairment in personal, family, social, educational, or occupational functioning.

##### ICD-11 Diagnostic Features

1. Impaired control over gaming.
2. Increasing priority given to gaming.
3. Continuation despite harmful consequences.
4. Functional impairment lasting at least 12 months.

##### Risk Factors

###### Biological Factors

- Genetic predisposition
- Dopamine dysregulation
- Neurochemical imbalance

###### Psychological Factors

- Anxiety
- Depression
- Emotional instability
- Low self-esteem
- Stress
- Loneliness

###### Social Factors

- Peer influence
- Social isolation
- Academic stress
- Family dysfunction
- Lack of parental supervision

###### Behavioral Factors

- Impulsivity
- Poor coping skills
- Reward-seeking behavior
- Excessive smartphone use

##### Neurobiology of Gaming Addiction

Gaming addiction activates the brain reward pathway similar to substance addiction.

##### Dopamine Reward System

Repeated gaming stimulates dopamine release in the mesolimbic reward pathway.

Important Brain Areas

- Ventral tegmental area
- Nucleus accumbens
- Prefrontal cortex
- Amygdala

Excessive dopamine stimulation leads to:

- Compulsive gaming behavior
- Craving
- Reduced impulse control
- Emotional dependence
- Withdrawal symptoms

Effect on Prefrontal Cortex

Chronic gaming reduces executive control functions such as:

- Decision making
- Attention regulation
- Emotional control
- Behavioral inhibition

## VI. EMOTIONAL DYSREGULATION AND GAMING DISORDER

Emotion dysregulation refers to inability to appropriately identify, process, and manage emotions. Individuals with gaming disorder often use gaming as an escape mechanism to avoid negative emotional states.

Emotional Manifestations

- Anxiety
- Irritability
- Restlessness
- Anger
- Mood swings
- Social withdrawal
- Emotional dependency

Mechanisms Of Emotional Dysregulation

Avoidance Behavior

Gaming temporarily suppresses stress and anxiety, creating psychological dependence.

Reinforcement Mechanism

Reward-based gaming strengthens maladaptive emotional coping.

Social Reinforcement

Online gaming communities provide temporary emotional validation.

## VII. ANXIETY AND MOBILE GAMING DISORDER

Anxiety is a psychological condition characterized by excessive worry, fear, tension, and autonomic hyperactivity.

Symptoms of Anxiety

Psychological Symptoms

- Fear
- Restlessness
- Irritability
- Poor concentration
- Excessive worrying

Physical Symptoms

- Palpitations
- Tremors
- Muscle tension
- Sweating
- Sleep disturbance

## VIII. RELATIONSHIP BETWEEN GAMING AND ANXIETY

Bidirectional Relationship

- Anxiety may increase gaming behavior.
- Excessive gaming worsens anxiety.

Causes of Anxiety in Gamers

- Sleep deprivation
- Social isolation
- Academic stress
- Competitive gaming pressure
- Emotional dependency
- Reduced physical activity

## IX. SLEEP DISTURBANCE IN MOBILE GAMING DISORDER

Sleep disturbance is one of the most common consequences of excessive gaming.

Mechanisms of Sleep Disturbance

Blue Light Exposure

Mobile screens suppress melatonin secretion, delaying sleep onset.

Hyper arousal

Exciting and competitive games increase sympathetic nervous system activity.

Circadian Rhythm Disturbance

Late-night gaming disrupts biological sleep cycles.

Emotional Excitation

Gaming-related stress and excitement impair relaxation before sleep.

Common Sleep Problems in Gamers

- Delayed sleep onset
- Reduced sleep duration
- Poor sleep quality
- Nightmares
- Daytime drowsiness
- Fatigue

Correlation Between Nidra Vega Dharan and Gaming Disorder

Many symptoms of Nidra Vega Dharan closely resemble manifestations observed in gaming disorder.

Ayurvedic Symptom	Modern Correlation
Jrumbha	Excessive yawning
Tandra	Daytime sleepiness
Alasya	Fatigue and lethargy
Angamarda	Body ache and muscular fatigue
Shiroruja	Headache
Akshi Gaurava	Eye strain
Moha	Cognitive confusion
Anavasthita Chitta	Poor concentration

The pathological mechanism of excessive gaming can therefore be conceptually understood as Nidra Vega Dharan associated with Manasika Dosha imbalance.

Ayurvedic Understanding of Gaming Disorder

Although gaming disorder is not directly described in classical Ayurvedic texts, its symptomatology can be understood through:

- Prajnaparadha
- Asatmya Indriyarthā Samyoga
- Nidra Vega Dharan
- Raja-Tama predominance
- Manovaha Srotodushti

Role of Prajnaparadha

Repeated excessive gaming despite harmful consequences indicates impaired intellect and judgment.

Manasika Dosha Involvement

Raja Dosha

- Hyperactivity
- Restlessness
- Desire and attachment
- Irritability

Tama Dosha

- Mental dullness
- Addiction
- Laziness
- Reduced awareness

Vata Dosha Aggravation

Excessive screen exposure, irregular sleep, mental overactivity, and sensory overstimulation aggravate Vata Dosha leading to anxiety and insomnia.

## X. PATHOGENESIS (SAMPRAPTI)

Nidana

- Excessive gaming
- Ratrijagarana
- Irregular lifestyle
- Mental stress
- Excessive sensory stimulation
- Emotional instability

Dosha Involvement

- Vata aggravation
- Raja-Tama increase
- Pitta association in irritability and anger

Dushya

- Manas
- Indriya
- Majja Dhatu
- Ojas

Srotas Involved

- Manovaha Srotas
- Pranavaha Srotas
- Majjavaha Srotas

Samprapti Ghataka

Component	Involvement
Dosha	Vata, Raja, Tama
Dushya	Manas, Majja
Agni	Vishama Agni
Srotas	Manovaha Srotas
Udbhava Sthana	Manas
Adhithana	Hridaya and Mastishka

XI. PSYCHOLOGICAL AND SOCIAL CONSEQUENCES

Psychological Consequences

- Anxiety disorders
- Depression
- Emotional instability
- Irritability
- Poor self-esteem
- Attention deficits

Social Consequences

- Social isolation
- Family conflicts
- Academic decline
- Occupational impairment
- Reduced social interaction

Physical Consequences

- Obesity
- Cervical pain
- Digital eye strain
- Sedentary lifestyle complications
- Musculoskeletal disorders

XII. DIAGNOSTIC ASSESSMENT

Modern Assessment Tools

Hamilton Anxiety Rating Scale (HAM-A)

Used for assessment of anxiety severity.

Internet Gaming Disorder Scale

Evaluates gaming addiction severity.

Sleep Assessment Scales

- Pittsburgh Sleep Quality Index
- Insomnia Severity Index
- Epworth Sleepiness Scale

Ayurvedic Assessment

Nidra Vega Dharan Lakshana Assessment

- Jrumbha
- Tandra
- Alasya
- Shiroruja
- Angamarda
- Akshi Gaurava

Preventive Measures

Lifestyle Modifications

- Limiting screen time
- Avoiding late-night gaming
- Maintaining regular sleep schedule
- Balanced diet
- Physical exercise

Sleep Hygiene

- Fixed bedtime routine
- Avoiding blue light before sleep
- Quiet sleep environment
- Reduced caffeine intake

Mental Health Strategies

- Counseling
- Stress management
- Emotional awareness
- Social interaction

Ayurvedic Management

Nidana Parivarjana

Avoidance of causative factors such as excessive gaming and sleep suppression.

Satvavajaya Chikitsa

Psychological counseling and mental discipline.

Techniques

- Positive thinking
- Emotional regulation
- Mind control
- Behavioral modification

Yoga and Meditation

Useful Practices

- Pranayama
- Yoga Nidra
- Meditation
- Mindfulness
- Bhramari Pranayama
- Nadi Shodhana

Dinacharya and Ratricharya

- Timely sleep
- Proper wake-up routine
- Avoidance of excessive sensory stimulation

Medhya Rasayana

Herbs useful for mental stability and sleep:

- Brahmi
- Shankhapushpi
- Ashwagandha
- Jatamansi
- Yashtimadhu

### XIII. MODERN MANAGEMENT APPROACHES

Cognitive Behavioral Therapy (CBT)

Helps modify maladaptive thoughts and gaming behavior.

Behavioral Therapy

- Time restriction techniques
- Digital detoxification
- Habit reversal training

Pharmacological Support

May be used in severe anxiety, depression, or insomnia.

Family Counseling

Improves family support and monitoring.

Integrative Approach

An integrative model combining Ayurvedic and modern approaches may provide better outcomes.

Components of Integrative Care

- Sleep restoration
- Emotional counseling
- Behavioral therapy
- Yoga and meditation
- Lifestyle correction
- Stress reduction
- Digital discipline

This multidimensional strategy may help improve emotional stability, reduce gaming dependency, and restore healthy sleep patterns.

### XIV. DISCUSSION

Mobile gaming disorder has become a significant psychological and social health concern in the digital era. Excessive gaming not only affects academic and

occupational functioning but also significantly impairs emotional and sleep health. Modern research demonstrates strong associations between gaming disorder, emotional dysregulation, anxiety, stress, and sleep disturbance.

Ayurveda explains that suppression of natural sleep leads to multiple physical and mental disturbances. The symptoms described under Nidra Vega Dharan closely correlate with manifestations observed in excessive gamers such as fatigue, drowsiness, headache, irritability, poor concentration, emotional instability, and anxiety.

Neurobiological evidence suggests that gaming activates the dopaminergic reward pathway, causing behavioral reinforcement and psychological dependence. Prolonged gaming also disrupts circadian rhythm and melatonin secretion, contributing to chronic sleep deprivation and emotional imbalance.

From an Ayurvedic perspective, excessive gaming may be considered a form of Prajnaparadha and Asatmya Indriyarth Samyoga resulting in aggravation of Vata Dosha and Raja-Tama predominance. Disturbance of Manovaha Srotas leads to emotional instability and impaired cognitive function.

The integrative understanding of gaming disorder through Ayurvedic and modern perspectives may provide a more holistic framework for prevention and management. Early identification, behavioral modification, sleep hygiene, psychological counseling, Yoga, meditation, and Ayurvedic lifestyle interventions can play important roles in reducing the burden of gaming-related emotional disorders.

### XV. CONCLUSION

Mobile gaming disorder is an emerging behavioral addiction associated with significant emotional and sleep disturbances. Anxiety, emotional dysregulation, irritability, poor concentration, and social dysfunction are common psychological consequences of excessive gaming.

Ayurvedic concepts of Nidra and Nidra Vega Dharan provide a valuable framework for understanding the pathological effects of sleep suppression caused by excessive gaming behavior. Many manifestations of gaming disorder correlate closely with symptoms described in Ayurvedic texts.

An integrative approach combining modern psychological interventions with Ayurvedic principles such as Nidana Parivarjana, Satvavajaya Chikitsa, Yoga, meditation, and proper sleep hygiene may help prevent and manage gaming-related mental health disorders effectively.

Further clinical and observational studies are required to establish evidence-based integrative treatment protocols for gaming disorder and associated emotional disturbances.

#### XVI. FUTURE SCOPE

1. Large-scale observational studies on gaming disorder and sleep disturbance.
2. Clinical evaluation of Ayurvedic interventions in gaming addiction.
3. Neurobiological studies correlating Nidra disturbance and emotional dysregulation.
4. Development of integrative management guidelines.
5. School and community awareness programs regarding responsible digital behavior.

#### REFERENCES

[1] Vd. V. S. Kale, *Charaka Samhita*, vol. 1. Varanasi, India: Chowkhambha Sanskrit Pratishtan, Sutra Sthana 30/26, p. 451.

[2] Vd. V. S. Kale, *Charaka Samhita*, vol. 1. Varanasi, India: Chowkhambha Sanskrit Pratishtan, Sutra Sthana 11/35, p. 178.

[3] Vd. V. S. Kale, *Charaka Samhita*, vol. 1. Varanasi, India: Chowkhambha Sanskrit Pratishtan, Sutra Sthana 21/36, p. 312.

[4] Dr. G. Garde, *Sartha Vagbhat*. Pune, India: Anmol Prakashan, Sutra Sthana 4/13, p. 16.

[5] Vd. V. S. Kale, *Charaka Samhita*, vol. 1. Varanasi, India: Chowkhambha Sanskrit Pratishtan, Sutra Sthana 21/50, p. 313.

[6] F. Shah, J. H. Khan, R. K. Patil, and R. Gupta, "Assessment of the prevalence, risk factors of Internet Gaming Disorder and psychological correlates in general population of North India," *Asian J. Pharm. Res.*, vol. 13, no. 4, pp. 227–232, 2023, doi: 10.52711/2231-5691.2023.00042.

[7] S. Lin, "Emotion dysregulation and Internet Gaming Disorder in young people: Mediating

effects of negative affect and metacognitions," *J. Behav. Addict.*

[8] M. Fatima and H. Zulfiqar, "Relationship between Internet Gaming Disorder and emotional intelligence among male adolescents," *Int. J. Sci. Res. Publ.*

[9] M. Mandriota, "Internet Gaming Disorder," medically reviewed by K. Gepp, PsyD, Jan. 5, 2022.

[10] Adwas, J. M. Jbireal, and A. E. Azab, "Anxiety: Insights into signs, symptoms, etiology, pathophysiology, and treatment," Faculty of Medicine, Sabratha University, Libya.

[11] *Encyclopedia of Psychology and APA Dictionary of Psychology*, American Psychological Association.

[12] M. Cabanac, "What is Emotion?" *Behav. Processes*, vol. 60, no. 2, pp. 69–83, 2002.

[13] W. W. Daniel, *Biostatistics: A Foundation for Analysis in the Health Sciences*, 7th ed. New York, NY, USA: John Wiley and Sons, 1999.

[14] M. S. Baghel, *Developing Guidelines for Clinical Research Methodology in Ayurveda*, Ayurveda Research Methodology Series.

[15] Central Council for Research in Ayurvedic Sciences, *Manual of Standard Operative Procedure for Assessment*. New Delhi, India: Ministry of AYUSH, Government of India, 2018.

[16] M. Hamilton, "The assessment of anxiety states by rating," *Br. J. Med. Psychol.*, vol. 32, pp. 50–55, 1959.

[17] S. Levenstein, C. Prantera, V. Varvo, M. L. Scribano, E. Berto, C. Luzi, and A. Andreoli, "Development of the perceived stress questionnaire: A new tool for psychosomatic research," *J. Psychosom. Res.*, vol. 37, no. 1, pp. 19–32, 1993.

[18] "Gaming Disorder Symptom Questionnaire: The development and validation of a screening tool for ICD-11 Gaming Disorder in adolescents," National Clinical Research Center for Mental Disorders, Department of Psychiatry, The Second Xiangya Hospital of Central South University.