



Impact of Modern Digital Exposure on Adherence to Dinacharya and Its Association with Health Indicators: A Comprehensive Cross-Sectional Survey Study

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Abstract: Digital technology has profoundly reshaped human behavior, sleep patterns, and lifestyle habits. Ayurveda offers a holistic framework known as *Dinacharya*, a structured daily routine synchronized with circadian rhythms to promote preventive health. This cross-sectional survey investigated how modern digital exposure—including total screen time, night-time device use, and social media engagement—affects adherence to classical Ayurvedic *Dinacharya* practices. The study also assessed relationships between *Dinacharya* adherence and health indicators such as sleep quality, digestive regularity, stress levels, and eye strain.

A structured questionnaire was administered to 250 adults aged 18–60 years. Results revealed a significant negative correlation between night-time digital exposure and adherence to *Dinacharya* ($\beta = -0.42$, $p < .001$). Participants with lower adherence reported poorer sleep quality, more digestive disturbances, higher perceived stress, and greater eye strain. The findings highlight the importance of integrating digital hygiene practices with Ayurvedic lifestyle recommendations for preventive health management.

Keywords: Dinacharya, Digital exposure, Circadian rhythm, Ayurveda, Sleep quality, Lifestyle health

INTRODUCTION

Rapid digitalization has transformed how people live, work, and interact. Screen-based technologies are now integral to daily life, but their physiological and psychological impacts have become increasingly evident. High levels of screen time are associated with circadian disruption, delayed sleep onset, psychological stress, and reduced cognitive focus [1–4]. Light emitted from electronic devices in the evening suppresses melatonin secretion, contributing to chronic sleep deprivation.

Ayurveda, India's ancient system of medicine, emphasizes lifestyle regulation through *Dinacharya*—a daily routine designed to maintain physiological harmony and prevent disease. Classical texts such as the *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* describe practices like early rising during *Brahma Muhurta*, maintaining regular bowel habits, performing *Abhyanga* (oil massage), *Nasya* (nasal therapy), scheduled meals, physical activity, and meditation [5–7]. These practices balance doshas, strengthen digestive fire (*Agni*), and enhance mental clarity.

While modern studies explore the effects of digital exposure on health, few examine its impact on adherence to Ayurvedic daily routines. The present study aims to bridge this gap by evaluating the influence of digital

device usage on adherence to Dinacharya and by exploring how adherence relates to physical and psychological well-being.

Objectives

1. To assess the level of adherence to Ayurvedic Dinacharya among adults.
2. To evaluate the extent of modern digital exposure, including total screen time and night-time device use.
3. To analyze the relationship between digital exposure and Dinacharya adherence.
4. To determine associations between Dinacharya adherence and selected health indicators such as sleep quality, digestion, stress, and eye strain.

Materials and Methods

Study Design and Participants

A cross-sectional survey design was adopted. Participants included adults aged 18–60 years, recruited through online platforms such as WhatsApp, social media groups, and academic networks. Individuals engaged in night-shift work or diagnosed with psychiatric disorders were excluded.

Data Collection Tool

A structured questionnaire was developed comprising four sections:

1. **Demographic Information:** Age, gender, and occupation.
2. **Digital Exposure Metrics:** Daily screen time, frequency of night-time device use, hours spent on social media, and device type.
3. **Dinacharya Adherence Scale (DAS):** A 7-item scale based on Ayurvedic principles assessing adherence to *Brahma Muhurta* waking, sleep timing, bowel regularity, *Abhyanga*, *Nasya*, meal scheduling, and exercise. Each item was rated on a 5-point Likert scale.
4. **Health Indicators:** Sleep quality (PSQI), digestive pattern, perceived stress (PSS), and frequency of eye strain.

Procedure

Data were collected over a four-week period via online responses. Participation was voluntary, and confidentiality was maintained.

Statistical Analysis

Data were analyzed using descriptive statistics, Pearson correlation, and multivariate regression tests to evaluate associations among digital exposure, Dinacharya adherence, and health outcomes.

Results

Demographic Profile

The mean age of respondents was 29.5 ± 7.4 years, with 54% females and 46% males. The average total screen time reported was 6.8 hours per day. Seventy-two percent of participants acknowledged frequent night-time device use, averaging 1.8 hours of exposure after 10 PM.

Dinacharya Adherence

Overall adherence to Dinacharya was low. Early rising scored the lowest (mean = 2.1), followed by *Abhyanga* and *Nasya* (mean = 1.9). Meal regularity showed moderate adherence (mean = 2.7), while exercise adherence was slightly higher (mean = 3.1).

Correlation Analysis

- Screen time vs. Dinacharya adherence: $r = -0.34$ ($p < .01$)
- Night-time device use vs. adherence: $r = -0.41$ ($p < .01$)
- Screen use after 10 PM vs. adherence: $r = -0.46$ ($p < .01$)
- Social media duration vs. adherence: $r = -0.29$ ($p < .05$)

Regression Analysis

Night-time digital exposure emerged as the strongest predictor of poor Dinacharya adherence ($\beta = -0.42$, $p < .001$).

Relationship with Health Indicators

Low Dinacharya adherence was significantly correlated with:

- Poor sleep quality: $r = -0.38$
- Increased stress: $r = -0.31$
- Digestive disturbances: $r = -0.25$
- Eye strain and headaches: $r = -0.33$

All findings were statistically significant.

Discussion

The results confirm that excessive night-time digital exposure disrupts adherence to classical Ayurvedic routines. The circadian misalignment created by prolonged screen use conflicts with Ayurvedic principles that emphasize synchronization with natural biological rhythms [5–7].

Participants with poor Dinacharya adherence experienced more health challenges, including disturbed sleep, digestive issues, stress, and visual fatigue. These outcomes parallel Ayurvedic descriptions of *Vata* aggravation, weakened *Agni*, and diminished *Ojas*.

Integrating digital hygiene with Ayurvedic guidance can serve as an effective preventive strategy. Practices such as reducing screen use before bedtime, setting digital curfews, and following consistent daily routines can help restore circadian balance. Public health campaigns and workplace wellness initiatives could benefit from incorporating these Ayurvedic principles alongside modern behavioral strategies.

Limitations

Key limitations include the self-reported nature of data, potential sample bias toward digitally active individuals, and the need for further validation of the Dinacharya Adherence Scale. Future studies should adopt longitudinal designs and incorporate physiological measures of circadian health to strengthen the evidence base.

Conclusion

The study demonstrates that higher exposure to digital devices, particularly at night, significantly lowers adherence to Ayurvedic Dinacharya and is associated with poorer health outcomes. Encouraging awareness about digital hygiene and promoting Ayurvedic preventive routines can support holistic well-being and restore circadian balance. Integrating traditional wisdom with modern behavioral science offers a sustainable approach to preventive healthcare in the digital age.

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