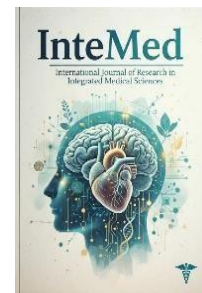




Intemed: International Journal of Research in Integrated Medical Sciences (IJ-RIMS)

Journal homepage: www.intemed.in

Vol.: 2 | Issue: 9 | Sep 2026



Article History: Received: 15-09-2026

Accepted: 18-09-2026

Published:30-09-2026

DOI: doi.org/10.68108/intemed.v2.i9.16

Research Article

An Assessment Study of Computer Vision Syndrome in IT professionals in Different *Deha Prakriti* with Special Reference to Schirmer's Test.

Dr. Shukra S. Wankhade¹, Dr. Ravindra S. Dhindhime², Dr. Dipak S. Pandit³, Dr. Chandarani A. Kshirsagar⁴, Dr. Rupali N. Patil⁵

1Assistant Professor, Department of Kriya Sharir, Takshashila Ayurveda College, Hospital & Research Center, Kherda (khurd), Wahim, Maharashtra – 444105

Email : shukrawankhade1997@gmail.com

2M.D. Ph.D Kriya Sharir, Professor and HOD, Department of Kriya Sharir, Government Ayurvedic College, Dharashiv, Maharashtra – 413501

Email : rutusama1964@gmail.com

3 BAMS, MD (Kriya Sharir) ,Medical officer,,District hospital, Solapur.Maharashtra 413004

Email : vddspandit@gmail.com

4Assistant professor,Dept of kriya sharir ,National Ayurvedic Hospital & Medical College, Maharana Pratap Chowk, Sillod Dist. Ch. Sambhajinagar, Maharashtra 431112

Email : chandanikshirsagar98@gmail.com

5Assistant Professor, Dept Of Rachana Sharir, SST Ayurvedic college Sangmner, Maharashtra 422605

Email : patilrupali1997@gmail.com

Abstract:

Background: Computer Vision Syndrome (CVS), also termed digital eye strain, is a constellation of ocular and visual symptoms associated with prolonged digital-screen exposure. The present study examined CVS in relation to *Deha Prakriti* and explored its symptom-based Ayurvedic correlation with *Shushkakshipaka*. Schirmer's test was included as an objective parameter of tear secretion.

Methods: An observational study was conducted among 100 volunteers aged 25–45 years who were exposed to

computer screens for more than 4 hours daily and had more than 5 years of occupational exposure. Data were collected through screening camps conducted in banks in the Marathwada region. Computer Vision Syndrome symptoms, *Shushkakshipaka*

Lakshanas, *Deha Prakriti*, and Schirmer's test-I values were recorded. The six *Dwandwaja Prakriti* groups represented in the sample were *Kapha-Pitta* (KP), *Kapha-Vata* (KV), *Pitta-Kapha* (PK), *Pitta-Vata* (PV), *Vata-Kapha* (VK), and *Vata-Pitta* (VP). Associations were

assessed using the Chi-square test at a 5% level of significance.

Results: Of the 100 participants, 77% were male and 23% female. The largest age group was 41–45 years (36%), followed by 36–40 years (33%), 31–35 years (19%), and 25–30 years (12%). *Vata-Pitta Prakriti* constituted 40% of the sample, followed by *Pitta-Vata* 17%, *Vata-Kapha* 15%, *Kapha-Vata* 12%, *Kapha-Pitta* 8%, and *Pitta-Kapha* 8%. Moderate CVS symptoms were observed in 74% of participants, while moderate *Shushkakshipaka* symptoms were observed in 75%. Schirmer's test values were 5–10 mm/5 min in 34%, 10–15 mm/5 min in 26%, 1–5 mm/5 min in 21%, and >15 mm/5 min in 19%. The association between *Shushkakshipaka* symptom severity and *Prakriti* was statistically significant ($\chi^2 = 24.864$, $df = 10$, $p = 0.002735$). The association between CVS symptom severity and *Prakriti* was also statistically significant ($\chi^2 = 20.056$, $df = 10$, $p = 0.028720$).

Conclusion: In this study population, CVS and *Shushkakshipaka* symptom severity showed statistically significant associations with *Dwandwaja Deha Prakriti*. *Vata-Pitta* participants represented the largest proportion of the sample and had the highest number of moderate and severe CVS/*Shushkakshipaka* observations. The findings support further investigation of constitutional factors in digital eye strain, preferably through larger multicentric and prospective studies.

Keywords: *Computer Vision Syndrome; Digital Eye Strain; Shushkakshipaka; Deha Prakriti; Vata-Pitta; Schirmer's test; Ayurveda*

INTRODUCTION

1. Introduction

Ayurveda describes health as a state in which *Dosha*, *Agni*, *Dhatu*, and *Mala* functions remain in equilibrium and the *Atma*, *Indriya*, and *Manas* are in a state of well-being [1]. Within this framework, *Deha Prakriti* denotes the constitutional pattern associated with the predominance of *Vata*, *Pitta*, and *Kapha* [2]. Ayurveda considers constitutional assessment important because individuals may differ in their physiological characteristics and responses to environmental and occupational exposures [2]. In contemporary life, prolonged use of computers, smartphones, and other digital devices has created a common occupational and lifestyle-related ocular complaint known as Computer Vision Syndrome (CVS) or Digital Eye Strain [3]. The syndrome is characterized by symptoms such as ocular dryness, foreign-body sensation, itching, burning, eye strain, blurred vision, and headache [3,4]. Sustained near work and reduced blinking during screen use may destabilize the ocular surface and tear film, contributing to discomfort and visual fatigue [4].

The Ayurvedic classics do not contain a direct description of the modern entity CVS. However, the thesis literature review identifies *Shushkakshipaka* as a relevant Ayurvedic condition for symptom-based correlation. Sushruta^[1] and

Vagbhata^[5,6] describe *Shushkakshipaka* among *Netra Rogas*, with features including *Rukshata*, *Gharsa*, *Toda*, *Upadeha*, *Daha*, *Avila Darshana*, and abnormalities of the eyelids. The thesis interprets the overlap between dryness, irritation, foreign-body sensation, and blurred vision as a basis for studying CVS in relation to *Shushkakshipaka*.

The relationship should be understood as a conceptual and symptom-based Ayurvedic correlation rather than as an assertion that CVS and *Shushkakshipaka* are identical biomedical diagnoses. The present work therefore evaluates the two symptom complexes separately while examining their relationship with *Deha Prakriti* and tear secretion.

The study population was selected from bank officers because the study area did not have an adequate IT-sector population. Bank officers fulfilled the predefined inclusion criteria, including prolonged computer exposure, and data collection was performed through organized bank camps after institutional ethical permission. This occupational group provided a practical population with sustained digital-screen exposure relevant to the research question.

2. Aim and Objectives

Aim: To study the relation between Computer Vision Syndrome and different *Deha Prakriti*.

Primary objective: To study the relation between Computer Vision Syndrome, considered in Ayurvedic symptom correlation with *Shushkakshipaka*, and different *Deha Prakriti*.

Secondary objectives:

- 1. To study Computer Vision Syndrome from the modern perspective.
- 2. To study *Shushkakshipaka* from the Ayurvedic perspective.
- 3. To study *Deha Prakriti* according to Ayurvedic principles.
- 4. To assess tear secretion using Schirmer's test-I and examine its distribution with symptom severity.

Research question: Is there an association between Computer Vision Syndrome/*Shushkakshipaka* symptom severity and different *Deha Prakriti*?

Null hypothesis (H0): There is no association between Computer Vision Syndrome/*Shushkakshipaka* symptom severity and different *Deha Prakriti*.

Alternative hypothesis (H1): There is an association between Computer Vision Syndrome/*Shushkakshipaka* symptom severity and different *Deha Prakriti*.

1. Literature Review

1.1 Computer Vision Syndrome

CVS is described in the thesis as a modern ocular condition related to prolonged computer and digital-screen use [3,4]. Its symptom complex includes dryness, itching, burning, blurred vision, foreign-body sensation, eye strain, and headache [3]. Reduced blink frequency during sustained screen viewing can reduce the regular redistribution of the tear film and increase ocular-surface discomfort [4]. Modern reviews cited in the thesis emphasize the multifactorial nature of digital eye strain, including visual demands, ocular-surface factors, ergonomic or environmental influences, and contemporary diagnostic/management protocols [7–10].

1.2 Shushkakshipaka and Ayurvedic Correlation

Shushkakshipaka is described in the thesis as a *Sarvagata Netra Roga* across classical treatises, including the *Madhava Nidana* [11], *Sharangadhara Samhita* [12], and *Bhavaprakasha* [13]. The reviewed classical descriptions include dryness/roughness of the eye and eyelids, blurred vision, foreign-body sensation, pricking or pain, stickiness, burning, and difficulty with opening or closing the eyelids [1,5,6,11–13]. The thesis notes that Sushruta emphasizes *Vata* involvement, whereas Vagbhata describes *Vata-Pitta* involvement [5,6]. In the context of prolonged digital visual work, Ayurvedic researchers have proposed that *Vata-Pitta* features provide a useful conceptual framework for symptom interpretation and therapeutic evaluation [14–18].

1.3 Deha Prakriti

Deha Prakriti represents an individual's constitutional pattern. The classical framework recognizes single-*Dosha* and dual-*Dosha* constitutions, with the present study examining six *Dwandvaja* groups. The study hypothesis was that constitutional differences may be reflected in the occurrence and severity of ocular symptoms during prolonged screen exposure, aligning with clinical literature exploring *Prakriti* distribution in dry eye diseases [19,20].

1.4 Tear Film and Schirmer's Test

The tear film is described in the thesis as a specialized preocular film containing lipid, aqueous, and mucin components [21]. It lubricates the ocular surface, supports optical quality, and contributes to protection from environmental insult [21]. Schirmer's test-I was used in the present study as an objective measure of aqueous tear secretion [22,23]. In the thesis grading system, values >15 mm/5 min were considered normal, 10–15 mm mild, 5–10 mm moderate, and <5 mm severe [22,23].

1. Methodology

1.1 Study Design and Setting

The study was an observational, cross-sectional assessment. Data were collected through screening camps organized in several banks in the Marathwada region. The study was

conducted after institutional ethical clearance, and written informed consent was obtained from participants.

1.2 Sample Size and Sampling

The thesis reports a sample size of 100. The sample-size calculation used an assumed prevalence of 50%, 95% confidence level ($Z = 1.96$), and 10% margin of error, yielding approximately 96 participants; the final sample was rounded to 100. Simple random sampling was reported as the sampling technique.

1.3 Participants

Participants were aged 25–45 years, of either sex, exposed to computer screens for more than 4 hours per day, employed in the relevant occupation for more than 5 years, willing to participate, and showing signs or symptoms of CVS. Although the original proposal referred to IT professionals, the actual study population consisted of bank officers because an adequate IT-sector population was not available in the study area. The thesis records that permission was obtained from the ethical committee and guide for this occupational substitution.

1.4 Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Written informed consent	Unwillingness to provide consent
Age 25–45 years	Age below 25 or above 45 years
Computer-screen exposure >4 h/day	Infectious ocular conditions such as conjunctivitis
>5 years of occupational exposure	Scleritis, uveitis, glaucoma, and other specified ocular pathology
Either sex	Fundus pathology such as diabetic/hypertensive retinopathy or papilledema
Signs and symptoms of CVS	Withdrawal from study at any stage

1.5 Assessment Parameters

General and ocular examination were performed. Ayurvedic assessment included relevant examination and *Deha Prakriti* assessment using the *Prakriti* Assessment Tool. CVS symptoms

assessed were dryness of eye, foreign-body sensation, itching, eye strain, and headache. *Shushkakshipaka*-related features included *Gharsa*, *Avila Darshana*, *Upadeha*, *Daha*, *Kunita*, *Toda*, *Raktaraji*, and *Daruna/Ruksha Vartma*. Symptoms were graded on the study's ordinal severity scale. Schirmer's test-I was performed using Schirmer strips and a stopwatch [22].

2.1 Statistical Analysis

The data were classified and summarized using frequencies and percentages. Associations between categorical variables were assessed using the Chi-square test. Statistical significance was considered at $p < 0.05$ with a 95% confidence level. The thesis reports $p = 0.002735$ for the association between *Shushkakshipaka* symptom severity and *Prakriti* and $p = 0.028720$ for the association between CVS symptom severity and *Prakriti*.

1. Results and Observations

1.1 Demographic Profile

Variable	Category	n	%
Age	25–30 years	12	12%
	31–35 years	19	19%
	36–40 years	33	33%
	41–45 years	36	36%
Sex	Male	77	77%
	Female	23	23%
Occupational group	Bank officers	100	100%

The 41–45-year age group constituted the largest proportion (36%), followed by 36–40 years (33%). Males represented 77% of the sample. All participants were bank officers in the final study population.

1.2 Deha Prakriti Distribution

Dwandwaja Prakriti	n	%
Kapha-Pitta (KP)	8	8%
Kapha-Vata (KV)	12	12%
Pitta-Kapha (PK)	8	8%
Pitta-Vata (PV)	17	17%
Vata-Kapha (VK)	15	15%
Vata-Pitta (VP)	40	40%
Total	100	100%

Vata-Pitta Prakriti was the most frequent constitutional category in the study sample (40%), followed by *Pitta-Vata* (17%) and *Vata-Kapha* (15%).

1.1 Computer Vision Syndrome Severity

CVS Severity	n	%
Mild	14	14%
Moderate	74	74%
Severe	12	12%
Total	100	100%

Moderate CVS was the predominant category, accounting for 74% of participants. Severe CVS was recorded in 12%, while 14% had mild CVS.

1.1 Shushkakshipaka Symptom Severity

Severity	n	%
Mild	14	14%
Moderate	75	75%
Severe	11	11%
Total	100	100%

Moderate *Shushkakshipaka* symptoms were predominant (75%), while 14% were mild and 11% severe.

1.1 Schirmer's Test

Schirmer's Value	Interpretation in Thesis	n	%
>15 mm/5 min	Normal	19	19%
10–15 mm/5 min	Mild	26	26%
5–10 mm/5 min	Moderate	34	34%
1–5 mm/5 min	Severe	21	21%
Total		100	100%

The largest group had Schirmer's values of 5–10 mm/5 min (34%), followed by 10–15 mm/5 min (26%). Values of 1–5 mm/5 min were recorded in 21%, while 19% had values above 15 mm/5 min.

1.1 Association Between Shushkakshipaka Symptoms and Prakriti

Severity	KP	KV	PK	PV	VK	VP	Total
Mild	4	2	4	1	2	1	14
Moderate	2	9	3	15	12	34	75
Severe	2	1	1	1	1	5	11
Total	8	12	8	17	15	40	100

The Chi-square test showed a statistically significant association between *Shushkakshipaka* symptom severity and *Dwandwaja Prakriti* ($\chi^2 = 24.864$, $df = 10$, $p = 0.002735$). The *Vata-Pitta* group had the largest number of moderate observations (34 of 40 participants).

1.1 Association Between CVS Symptoms and Prakriti

Severity	KP	KV	PK	PV	VK	VP	Total
Mild	0	2	3	3	1	5	14
Moderate	6	10	5	14	14	25	74

Severe	2	0	0	0	0	10	12
Total	8	12	8	17	15	40	100

The association between CVS symptom severity and *Prakriti* was statistically significant ($\chi^2 = 20.056$, $df = 10$, $p = 0.028720$). The *Vata-Pitta* group contained 25 moderate and 10 severe CVS observations. Selected symptom observations included *Rukshata*/dryness, *Gharsa*/foreign-body sensation, *Daha*/burning, *Avila Darshana*/blurred vision, *Kandu*/itching, and *Raktaraji*/redness. The thesis reports that dryness, foreign-body sensation, burning, and blurred vision were prominent findings, with many observations falling in the moderate severity category.

1. Discussion

The present observational study explored the relationship between digital-screen-related ocular symptoms and *Deha Prakriti* in 100 working adults. The study combined modern symptom assessment with an Ayurvedic symptom framework and an objective tear-secretion parameter. The central finding was a statistically significant association between symptom severity and *Dwandwaja Prakriti* for both *Shushkakshipaka* and CVS.

1.1 Occupational Exposure and Study Population

The selection of bank officers was driven by feasibility and occupational relevance. The study area did not have sufficient IT-sector workers for the proposed sample. Bank officers had sustained computer exposure, with all participants meeting the criterion of more than four hours of screen exposure per day and more than five years of occupational exposure. Thus, the final population represents a specific occupational group rather than IT professionals in general.

1.1 Age and Sex Distribution

The concentration of participants in the 36–45-year range reflects the inclusion of established working adults with prolonged occupational exposure. The sample contained more males than females (77% versus 23%). Because the study was not designed to compare CVS between sexes, the observed sex distribution should be interpreted as a characteristic of the study sample rather than as evidence of a sex-specific risk.

1.2 Deha Prakriti and Symptom Severity

Vata-Pitta was the most frequent *Prakriti* category (40%) and also contained the largest number of moderate and severe symptom observations. From an Ayurvedic interpretive perspective, the thesis relates this pattern to the properties of *Vata* and *Pitta*, particularly *Ruksha* and *Ushna/Tikshna* attributes, and to prolonged visual exertion (*Chakshurendriya Ativyayama*) [1,2]. The findings are consistent with the study hypothesis, but the observational design cannot establish that *Vata-Pitta* constitution independently causes CVS.

1.3 Shushkakshipaka as an Ayurvedic Symptom Correlation

The study intentionally uses *Shushkakshipaka* as an Ayurvedic correlation for the symptom complex rather than treating it as a direct modern diagnostic equivalent. Dryness, foreign-body sensation, burning, blurred vision, and ocular discomfort overlap between the two descriptions. Classical references cited in the thesis describe *Shushkakshipaka* with *Vata* and *Vata-Pitta* involvement [1,5,6]. This provides a conceptual bridge for interpreting modern digital eye strain within an Ayurvedic framework [14–18].

1.4 Schirmer's Test and Tear Secretion

Schirmer's test provided an objective component to the predominantly symptom-based assessment [22]. In the present dataset, 81% of participants had values of 15 mm/5 min or less, while 19% had values above 15 mm/5 min. The largest subgroup (34%) had values of 5–10 mm/5 min. These observations support the presence of reduced tear secretion in a substantial proportion of participants, although Schirmer's test alone does not characterize every mechanism of digital eye strain or ocular-surface disease [21].

1.5 Statistical Findings

The association between *Shushkakshipaka* symptom severity and *Prakriti* was significant at $p = 0.002735$, while the association between CVS symptom severity and *Prakriti* was significant at $p = 0.028720$. These results indicate that symptom categories were not distributed uniformly across the six *Prakriti* groups in this sample. They do not, by themselves, establish causality, population-level prevalence, or independent predictive effects.

1.1 Clinical and Ayurvedic Implications

The findings suggest that constitutional assessment may be worth considering when developing preventive approaches for individuals with prolonged digital exposure. In an Ayurvedic framework, attention to visual workload, adequate breaks, blink awareness, sleep, diet, and constitution-specific lifestyle guidance may be explored [14,17,20]. However, therapeutic efficacy was not tested in this study, and recommendations should therefore be considered hypotheses for future interventional research rather than outcomes demonstrated by the present work.

1.2 Strengths and Limitations

- **Strengths:** Included a defined occupational exposure criterion, assessment of both modern CVS symptoms and Ayurvedic *Shushkakshipaka* features, *Prakriti* assessment, and inclusion of Schirmer's test as an objective parameter. The sample size was 100 and all enrolled participants completed the study, with no reported withdrawals.
- **Limitations:** Conducted in a specific regional occupational population, limiting generalizability. The cross-sectional observational design permits

association but does not establish causation. The sample was predominantly male and consisted entirely of bank officers, limiting subgroup comparisons and external validity. The study did not include a non-screen-exposed control group and did not evaluate longitudinal change or response to treatment. The conceptual equivalence between CVS and *Shushkakshipaka* should not be interpreted as a direct biomedical equivalence.

2. Conclusion

In this observational study of 100 digital screen-exposed bank officers, Computer Vision Syndrome and *Shushkakshipaka* symptom severity showed statistically significant associations with different *Dwandwaja Deha Prakriti*. *Vata-Pitta* was the most represented *Prakriti* (40%) and accounted for the largest number of moderate and severe CVS observations. Moderate CVS and moderate *Shushkakshipaka* were the predominant severity categories. Schirmer's test showed reduced tear-secretion values in a substantial proportion of participants, with 34% recording 5–10 mm/5 min and 21% recording 1–5 mm/5 min. The Chi-square analysis demonstrated significant associations for *Shushkakshipaka* symptoms ($p = 0.002735$) and CVS symptoms ($p = 0.028720$) with *Prakriti*.

The study therefore supports an association between constitutional type and the distribution of digital-screen-related ocular symptoms within this sample. Larger multicentric studies with control groups, standardized CVS diagnostic criteria, additional ocular-surface tests, and prospective follow-up are required to determine the reproducibility and clinical significance of this relationship.

3. Declarations

Ethics approval: Institutional ethical clearance was obtained as reported in the thesis.

Informed consent: Written informed consent was obtained from all participants.

Funding: No separate external funding information was reported in the thesis manuscript.

Conflict of interest: No conflict-of-interest statement was reported in the thesis. This should be completed by the authors according to the target journal's requirements.

Data availability: The present manuscript is based on the thesis dataset. Data-sharing statements should be completed according to institutional and journal policy.

4. References

- Shastri A, editor. Sushruta Samhita of Maharshi Sushruta, Sutrasthana & Uttaratantra. Varanasi: Chaukhamba Sanskrit Sansthan; 2014.
- Tripathi R, editor. Charaka Samhita of Agnivesha, Sutrasthana & ViManasthana. New Delhi: Chaukhamba Sanskrit Pratishthan; 2011.
- Blehm C, Vishnu S, Khattak A, Mitra S, Yee RW. Computer vision syndrome: a review. *Surv Ophthalmol*. 2005;50(3):253-262. doi:10.1016/j.survophthal.2005.02.008.
- Rosenfield M. Computer vision syndrome: a review of ocular causes and potential treatments. *Ophthalmic Physiol Opt*. 2011;31(5):502-515. doi:10.1111/j.1475-1313.2011.00834.x.
- Vagbhata. Ashtanga Hridayam with Vidyotini commentary. Varanasi: Chaukhamba Sanskrit Sansthan; reprint 2012.
- Vagbhata. Ashtanga Samgraha. Edited by Shivaprasad Sharma. Varanasi: Chaukhamba Sanskrit Series Office; reprint 2008.
- Coles-Brennan C, Sulley A, Young G. Management of digital eye strain. *Clin Exp Optom*. 2019;102(1):18-29. doi:10.1111/cxo.12798.
- Pavel IA, Bogdanici CM, Donica VC, Nita O, Sandu IC, Stefanescu-Dima L, et al. Computer vision syndrome: an ophthalmic pathology of the modern era. *Exp Ther Med*. 2023;25(3):210. doi:10.3892/etm.2023.11875.
- Kahal F, Al Darra A, Torbey A. Computer vision syndrome: a comprehensive literature review. *Future Sci OA*. 2025;11(1):2476923. doi:10.1080/20565623.2025.2476923.
- Parihar S, Rajput J, Mishra D, Panda DR, Pal K, Shukla E. Computer vision syndrome: a disease of the new era. *J Ophthalmic Res Pract*. 2024;2:53-56.
- Upadhyaya Y, editor. Madhava Nidana of Madhavakara. Varanasi: Chaukhamba Sanskrit Sansthan; 1998.