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Role of Dinacharya, Ritucharya, and Sadvritta in Public Health Promotion: An Evidence-Based Review

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Abstract- Dinacharya (daily regimen), Ritucharya (seasonal regimen), and Sadvritta (code of ethical/behavioral conduct) constitute the three principal lifestyle-based pillars of Swasthavritta, the Ayurvedic discipline of preventive and social medicine. This review examines the convergence between these classical constructs and contemporary biomedical evidence in chronobiology, seasonal metabolic/immune physiology, and behavioral/positive psychology. Dinacharya's alignment with circadian biology is the best-substantiated of the three, supported by molecular chronobiology (201 7 Nobel Prize-recognized clock genes) and clinical chronodisruption data. Ritucharya's seasonal-adaptation framework corresponds to documented seasonal variation in gene expression, gut microbiome composition, and metabolic markers, though direct outcome trials specific to Ritucharya remain limited. Sadvritta's ethical-conduct framework parallels established constructs in positive psychology (prosocial behavior, self-regulation, gratitude, compassion) with plausible but under-quantified mental-health impact. Collectively, these three pillars represent a coherent, low-cost, non-pharmacological framework for public health promotion and NCD prevention, though the evidence base is dominated by narrative/conceptual reviews rather than controlled outcome trials — a gap this paper identifies as the priority for future research.

Keywords— inacharya; Ritucharya; Sadvritta; Ayurveda; Public Health Promotion; Preventive Health; Health Promotion; Lifestyle Modification

I. INTRODUCTION

Swasthavritta, the branch of Ayurveda devoted to preserving health rather than curing disease, is built around a small number of behavioral constructs meant to align individual life with natural biological rhythm and ethical social conduct. Three of these — Dinacharya, Ritucharya, and Sadvritta — together cover the daily, seasonal, and behavioral dimensions of preventive practice.

As global public health increasingly recognizes lifestyle modification as central to non-communicable disease (NCD) prevention, these classical constructs merit evaluation against the modern evidence base in chronobiology, nutrition, immunology, and behavioral science. This review synthesizes current scientific literature relevant to each construct and assesses their collective public health relevance.

II. DINACHARYA (DAILY REGIMEN) AND CIRCADIAN BIOLOGY

1. Conceptual Basis

Dinacharya prescribes a structured daily sequence — pre-dawn waking (Brahma Muhurta), oral/tongue hygiene, timed elimination, exercise, bathing, meal timing aligned to digestive capacity (Agni), and a wind-down routine before a consistent bedtime — designed to align the individual with the diurnal solar cycle.

2. Evidence Base

Modern chronobiology confirms a master circadian clock in the hypothalamic suprachiasmatic nucleus (SCN), with peripheral clocks in the liver, gut, heart, and immune cells, each entrained by timing cues (light, food, activity) — a physiological substrate closely mirroring Dinacharya's emphasis on regulated timing of waking, eating, and activity.

A 2025 comparative chronobiology analysis explicitly maps Dinacharya's dosha-based timing schedule onto documented diurnal variation in metabolic activity, and further notes that Aushadha Sevana Kala(time-specific drug administration) parallels modern chronopharmacology — i.e., the documented diurnal variation in drug absorption, metabolism, and efficacy.

Chronodisruption — disconnection from natural circadian timing — is independently associated in the biomedical literature with impaired cognitive function, mood and sleep disorders, daytime sleepiness, reduced school performance, substance use, cardiovascular disease, diabetes, obesity, and certain cancers, providing an evidence-based rationale for why Dinacharya's core timing principles could plausibly reduce NCD risk.

A structured review proposed Dinacharya as a candidate quaternary prevention strategy for NCDs — i.e., a framework for avoiding low-value/over-medicalized care by addressing root lifestyle drivers before disease onset — situating it explicitly within the modern prevention hierarchy (primary through quaternary) used in public health.

Consistent sleep/wake timing, regular meal timing, and daily physical activity are described in the literature as reinforcing circadian rhythm strength, which in turn optimizes hormone production, immune function, and metabolic health.

3. Evidence Gap

Direct randomized controlled trials evaluating "Dinacharya adherence" as a composite intervention against hard clinical endpoints are largely absent; most support is mechanistic/convergent (i.e., individual components map on to established chronobiological findings) rather than outcome-based for the practice as a bundled protocol.

III. RITUCHARYA (SEASONAL REGIMEN) AND SEASONAL PHYSIOLOGY

1. Conceptual Basis

Ritucharya prescribes season-specific adaptation of diet (Ahara), lifestyle (Vihara), and conduct (Achara) across six classical seasons (Ritu), based on predictable seasonal fluctuation of the three doshas.

2. Evidence Base

A qualitative review cross-referencing classical texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya) with modern chronobiology literature concluded that scientific evidence supports the effect of seasonal change on circadian rhythms, immunity, metabolism, and disease manifestation — directly corroborating Ritucharya's foundational premise.

A cited 201 9 observational study reported that individuals adhering to seasonal regimens showed reduced frequency of seasonal illness and improved metabolic markers (lipid and glucose levels) compared with non-adherents — one of the few outcome-oriented (rather than purely conceptual) data points in this literature.

A large-scale genomic study (cited across multiple Ritucharya reviews) found that of roughly 1 6,000 genes studied, approximately 4,000 showed seasonally variable activity, published in Nature Com munications— independent molecular evidence for the seasonal physiological variation Ritucharya was designed to address.

A dedicated review in the Journal of Ethnic Fo odsexamined the relevance of Ritucharya specifically through the lens of seasonal gut microbiome variation, concluding that diet and climate substantially alter commensal microbial communities, and that resulting dysbiosis is mechanistically linked to increased pathogen susceptibility, inflammatory disease, and metabolic/NCD risk — providing a plausible biological pathway for Ritucharya's traditional claims.

Neuroendocrine seasonal-variation data (e.g., seasonal changes in brain serotonin turnover linked to sunlight exposure) is cited as convergent evidence for Ritucharya's seasonal mental-health claims.

3. Evidence Gap

As with Dinacharya, the literature is dominated by narrative and conceptual reviews; the 201 9 observational adherence study is a rare exception, and reviewers explicitly note that "more studies are needed to explore the potential benefits of Ritucharya on human health" and to determine effective modern implementation strategies.

IV. SADVRITTA (CODE OF RIGHT CONDUCT) AND BEHAVIORAL/MENTAL HEALTH

1. Conceptual Basis

Sadvritta comprises five classical domains of conduct: Sharirika (physical), Manasika (mental), Samajika (social), Dharmika (moral), and Vyavaharika (ethical) — collectively prescribing compassion, self-control, truthful speech, respect for others, and disciplined behavior as determinants of health, distinct from purely biomedical intervention.

2. Evidence Base

- A dedicated review draws explicit, structured parallels between Sadvritta's five domains and established constructs in contemporary positive psychology and behavioral science — prosocial behavior, self-control/self-regulation, gratitude, and compassion — each of which carries an independent empirical evidence base linking these traits to improved mental well-being.
- A separate literature review (spanning PubMed, Scopus, and Web of Science) concluded that behavioral interventions aligned with Sadvritta principles are associated with reduced risk factors for cardiovascular, metabolic, and psychosomatic disorders, framing Sadvritta as a preventive health strategy rather than solely a moral-philosophical one.
- Classical-text analysis (Sushruta Samhita, Ashtanga Hridaya) shows Sadvritta was historically framed not only as individual guidance but as a component of medical ethics and public health education, with physicians explicitly expected to model the conduct they prescribed.
- Reviewers consistently note Sadvritta's relevance to modern lifestyle medicine and stress management, given its emphasis on emotional regulation and social harmony as preventive (not just moral) constructs.

3. Evidence Gap

This is the least quantitatively substantiated of the three constructs. Reviewers explicitly and consistently call for further research to establish "quantifiable health outcomes of Sadvritta-based interventions" — current support rests almost entirely on conceptual alignment with established psychological constructs rather than direct outcome trials of Sadvritta itself.

V. INTEGRATED PUBLIC HEALTH RELEVANCE

Construct	Primary modern-science correlate	Strength of direct outcome evidence	Public health application
Dinacharya	Circadian biology / chronobiology	Moderate (strong mechanistic, weak direct-outcome)	Sleep hygiene, meal-timing, and chronotherapy-informed primary care counseling
Ritucharya	Seasonal immune/metabolic/microbiome physiology	Limited (one adherence-outcome study; strong mechanistic)	Seasonal NCD-risk and infectious-disease-season counseling
Sadvritta	Positive psychology, behavioral self-regulation	Limited (conceptual parallel only)	Mental health promotion, stress-reduction, and community/social-conduct programming

All three constructs share common structural strengths as public health interventions: they are non-pharmacological, low-cost, scalable at the community level, and require no specialized infrastructure — properties directly relevant to Universal Health Coverage's underperforming preventive/promotive pillar (see companion analysis on Swasthavritta and UHC). Their common weakness is equally consistent across the literature: a preponderance of narrative reviews and classical-text exegesis relative to controlled clinical or population-level outcome trials.

Limitations of the Current Evidence Base

Most cited support is convergent/mechanistic — modern findings in an adjacent field (chronobiology, microbiome science, positive psychology) are shown to be compatible withclassical claims, which is not equivalent to a direct trial confirming the classical intervention itself produces the claimed outcome.

Outcome studies that do exist (e.g., the 201 9 Ritucharya adherence study) are observational, not randomized, and carry attendant confounding risk.

Reviews of all three constructs are frequently authored within Ayurvedic academic departments (a possible source of publication and interpretive bias) and are not typically indexed as systematic reviews with PRISMA methodology.

No large-scale, prospective, controlled trial evaluating Dinacharya, Ritucharya, or Sadvritta as bundled interventions against hard population health endpoints (NCD incidence, mortality, DALYs) currently exists in the literature reviewed.

VI. CONCLUSION

Dinacharya, Ritucharya, and Sadvritta together constitute a coherent, biologically plausible, low-cost framework for daily, seasonal, and behavioral health promotion, with Dinacharya carrying the strongest convergence with established circadian science, Ritucharya showing meaningful but less-developed convergence with seasonal immunology and microbiome research, and Sadvritta resting primarily on conceptual alignment with positive psychology constructs.

Their shared translational value for public health lies in scalability and cost, matching the exact gap identified in current global Universal Health Coverage progress — promotive and preventive care. The principal need going forward is not further conceptual argument but prospective, controlled, outcome-linked research that tests these constructs directly against population health metrics, rather than inferring benefit solely from adjacent scientific fields.

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This review synthesizes classical Ayurvedictexts alongside peer-reviewed and preprintliterature current as of August 2026. Itisintended for academic and public health discussion anddoes not constitute clinical guidance.

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