Innovations in Shalakya Tantra for Women and Child Health: A Narrative Evidence-Based Review with Community Implementation Framework.

Dr Omkar D Salokhe [1] Dr Jayvant V Kharat [2]

Abstract

The rising prevalence of ophthalmic and ENT disorders among women and children reflects the combined impact of changing lifestyles, prolonged screen exposure, environmental allergens, and physiological vulnerability during growth and hormonal transitions. In children, allergic rhinitis, recurrent tonsillitis, allergic conjunctivitis, and dry eye disease are increasingly reported and significantly affect school attendance, academic performance, and quality of life. Women, particularly during antenatal and postnatal periods, commonly experience rhinitis of pregnancy and hormonally influenced ocular surface disorders, which may compromise maternal comfort and overall well-being. The conventional system offers symptomatic relief; however, recurrence, long-term medication dependence, and limited preventive scope highlight the need for integrative strategies.

Shalakya Tantra, the Ayurvedic speciality dealing with diseases of the eye, ear, nose, and throat, provides preventive, local, and systemic therapeutic modalities aimed at correcting the underlying imbalance of doshas, improving mucosal immunity, and reducing the recurrence. Clinical evidence from randomised and comparative studies demonstrates the therapeutic potential of *Nasya, Ashchyotana, Anjana, Tarpana,* and classical internal formulations in the management of allergic rhinitis, tonsillitis, allergic conjunctivitis, and dry eye syndrome. This narrative evidence-based review synthesises current clinical findings and proposes a structured community-level implementation framework. Integration of standardised *Shalakya* protocols within school health programs and maternal care services may strengthen preventive care and offer a sustainable adjunct to conventional management in Women and Child Health.

Introduction

Women and Child Health (WCH) is a critical pillar of public health, encompassing the physical, developmental, reproductive, and immunological well-being of children from early childhood through adolescence, and of women across the antenatal and postnatal stages. These populations are biologically vulnerable due to developing immunity in children and hormonal–vascular changes in women, especially during pregnancy. Health disturbances during these phases not only affect immediate quality of life but also influence long-term growth, cognitive performance, maternal outcomes, and intergenerational health patterns. Therefore, preventive, safe, and sustainable healthcare strategies are essential for this group.

Among the most common disorders affecting women and children are allergic rhinitis, tonsillitis, allergic conjunctivitis, and dry eye disease. Epidemiological data demonstrate a rising trend of allergic rhinitis among children aged 6–14 years, with increasing prevalence over the past decades.[1] Tonsillitis remains one of the most frequent causes of paediatric outpatient visits and recurrent antibiotic prescriptions. Allergic conjunctivitis significantly

affects school performance due to itching, watering, and photophobia, while increasing digital exposure has contributed to growing concerns regarding dry eye disease in children.

In women, rhinitis of pregnancy affects nearly one-fourth of pregnant individuals, largely due to hormonal changes causing nasal mucosal oedema, while postnatal hormonal fluctuations may predispose to ocular surface instability.[2] Conventional management primarily includes antihistamines, corticosteroids, decongestants, antibiotics, and lubricants—therapies that offer symptomatic relief but are associated with recurrence, long-term medication dependence, potential adverse effects, and limited preventive scope. Considering the chronicity, recurrence, and impact on quality of life, there is a growing need for integrative approaches.

Shalakya Tantra, the Ayurvedic branch dealing with diseases of the eye, ear, nose, and throat, offers preventive, local, and systemic therapeutic modalities aimed at correcting underlying *doshic* imbalance, improving immunity, and reducing recurrence. Thus, incorporating evidence-based *Shalakya* interventions into women and child health frameworks at the school and community levels may provide a safer and more sustainable healthcare model.

Epidemiological and clinical landscape of ENT and eye disorders in children and women (Antenatal and Postnatal)

Allergic Rhinitis

Allergic rhinitis (AR) is an IgE-mediated inflammatory condition of the nasal mucosa characterised by sneezing, nasal congestion, nasal itching, and rhinorrhoea. It is triggered by exposure to inhaled allergens and involves an immune response with early and late inflammatory phases mediated by leukotrienes.[3]

Epidemiological data demonstrate a rising burden of allergic rhinitis in Indian children. The prevalence of nasal symptoms increased from 12.5% to 12.9% among children aged 6–7 years and from 18.6% to 23.6% among those aged 13–14 years over 15 years.[1]

In children, AR significantly affects academic performance, sleep, quality of life, and school attendance. Conventional management includes antihistamines, intranasal corticosteroids, decongestants, leukotriene receptor antagonists such as montelukast, mast cell stabilisers, and intranasal anticholinergics. While these provide symptomatic relief, recurrence and long-term dependence remain concerns.
Allergic rhinitis is correlated with *Vata Kaphaj Pratishyaya*, where vitiation of Vata along with Kapha leads to nasal obstruction, sneezing, and discharge.

Recurrent Tonsillitis

Tonsillitis is a common childhood illness resulting from pharyngeal infection and is frequently seen in the paediatric age group. Nearly all children experience at least one episode, and approximately 7,455,494 cases occur annually in India.[4] Recurrent tonsillitis may lead to repeated inflammation and enlargement of tonsils, causing airway obstruction, difficulty in swallowing, missed school days, and impaired growth and development

Medical management largely relies on antibiotics, and in recurrent cases, tonsillectomy is often considered.

In Ayurveda Tonsillitis closely resembles *Tundikeri,* described under *Mukha Roga* in Ayurveda. Acharya Sushruta describes it as a *Bhedya Roga*, managed along the principles of *Galashundika*, emphasising drugs with *Lekhana, Shothahara, Ropana,* and *Vedanasthapana* properties.

Allergic Conjunctivitis

Simple allergic conjunctivitis is the most common form of ocular allergy, with a prevalence ranging from 5–22% in the general population. It is a hypersensitivity reaction to airborne antigens and is characterised by itching, redness, watering, foreign body sensation, and mild chemosis. Epidemiological data demonstrate an increase in allergic rhinoconjunctivitis from 3.3% to 3.9% in younger children and from 5.6% to 10.4% in adolescents. Recurrence is common, reported in 41–62% of cases.[1]

Modern drugs act through H1 receptor antagonism, mast cell stabilisation, and inhibition of inflammatory mediators; however, they are expensive, may produce adverse drug reactions, and often require long-term use.
Allergic conjunctivitis is correlated with *Vataja Abhishyanda*, characterised by *Toda* (pricking pain), *Sangharsha* (foreign body sensation), *Achchhashruta* (watery discharge), dryness, and congestion.

Dry Eye Disease (DED)

Dry eye disease is a multifactorial disorder of the tear film and ocular surface characterised by tear film instability, ocular discomfort, and visual disturbance. A recent meta-analysis including 48,479 paediatric participants estimated the prevalence of DED in children to be 23.7%, with higher rates reported after the COVID-19 pandemic (44.1%).[5]

Increasing digital device usage and lifestyle changes are considered major contributing factors that significantly affect quality of life.
Ayurveda correlates Dry eye syndrome with *Shushkakshipaka*.

Rhinitis of Pregnancy

Rhinitis of pregnancy occurs in approximately 20–30% of pregnant women, usually during the second trimester, due to elevated oestrogen and progesterone levels, leading to increased nasal vascularity and mucosal oedema. It is primarily diagnosed clinically and managed conservatively with saline irrigation and carefully selected medications safe in pregnancy. This condition falls under hormonal-related rhinitis as described in autonomic rhinitis. [2]

Hormonally Influenced Dry Eye

Hormonal variations during antenatal and postnatal periods can influence tear film stability, predisposing women to ocular surface dryness. Considering that DED is already prevalent and multifactorial hormonal shifts may further aggravate susceptibility in women.[6]

Ayurvedic Correlation:

Modern Diagnosis	Ayurvedic Correlation	Dosha Involvement	Classical Reference
Allergic Rhinitis	Vata-Kaphaja Pratishyaya	Vata + Kapha	Charaka Samhita
Tonsillitis	Tundikeri	Kapha + Rakta	Sushruta Samhita
Allergic Conjunctivitis	Abhishyanda	Pitta + Kapha	Ashtanga Hridaya
Dry Eye Syndrome	Shushkakshipaka	Vata + Pitta	Sushruta Samhita

Clinical Evidence Supporting Shalakya Interventions in Allergic Rhinitis

Allergic rhinitis (AR), correlated with Vata-Kapha Pratishyaya in Ayurveda, has been evaluated in several clinical studies using classical formulations and Nasya therapy.

A multicentric randomised controlled trial protocol published in 2024 evaluated a combined Ayurvedic regimen of *Anu Taila Nasya*, *Naradiya Lakshmivilas Rasa*, and *Shirishadi Kwath* in comparison with intranasal fluticasone spray. The study assesses validated outcome measures, including CARAT score, nasal endoscopy findings, and laboratory parameters.[3]

In addition, clinical trials evaluating *Rajanyadi Yoga* have reported significant improvement in sneezing, nasal obstruction, and rhinorrhoea, along with a reduction in eosinophil count.[7]

Similarly, studies on *Tamalakyadi Yoga* have demonstrated symptomatic relief in nasal obstruction and rhinorrhoea, supporting its anti-inflammatory and mucosal stabilising role.[8]

Overall, available evidence suggests that Ayurvedic interventions, particularly when combining Nasya with internal medications, may provide symptomatic relief and improve mucosal health in allergic rhinitis.

Evidence Summary Table: Allergic Rhinitis

Author / Study	Year	Study Design	Intervention	Outcome Measures	Key Findings
Shweta Mata et al. CCRAS Multicentric Trial	2024	Randomised Controlled Trial	Anu Taila Nasya + Naradiya Lakshmivilas Rasa + Shirishadi Kwath	CARAT score; Nasal endoscopy index; IgE; Eosinophil count	Structured evaluation of combined Ayurvedic regimen; pilot data suggest symptom reduction

Shweta Mata et al.	2023	Clinical Trial	Rajanyadi formulation	Symptom score; Eosinophil count	Reduction in sneezing, obstruction, rhinorrhea; improvement in inflammatory markers
J M Dahanayake et al.	2020	Clinical Trial	Tamalakyadi decoction	Symptom score	Significant improvement in nasal obstruction and rhinorrhea

Clinical Evidence Supporting Shalakya Interventions in Tonsillitis

Clinical trials with *Kanchnara Guggulu* and *Tankana-Madhu Pratisarana* in children have shown that Ayurvedic therapy can significantly reduce the cardinal symptoms of tonsillitis, such as pain, swelling, burning sensation, fever, and associated complaints like sore throat, dysphagia, and lymph node enlargement.[4] Ayurveda approaches tonsillitis (*Tundikeri*) as a *Kapha-dominant disorder*, and these formulations provide anti-inflammatory, healing, and immune-supportive effects. The study reported highly significant improvements without adverse haematological or microbiological changes, supporting Ayurveda as a safe and effective alternative to repeated antibiotics or surgical removal of tonsils.

Evidence Summary Table: Tonsillitis

Author / Study	Year	Study Design	Intervention	Outcome Measures	Key Findings
Adhvaryu et al.	2016	Clinical trial	children Kanchnara Guggulu (oral) + Tankana-Madhu	Relief in cardinal symptoms (pain, swelling, burning sensation, fever) and associated features (sore throat, dysphagia, halitosis, lymph node enlargement	Significant improvement in symptom

Clinical Evidence Supporting Shalakya Interventions in Allergic Conjunctivitis

Clinical trials in Ayurveda have demonstrated promising results in the management of allergic conjunctivitis. *Bilvadi Yoga Ashchyotana* showed superior relief in pain, foreign body sensation, dryness, itching, and redness compared to Bilvadi eye drops, with both being

safe and effective.[9] Another study comparing *Pathyadi Anjana Varti* and *Madhu Shigru Aschyotana* found that both improved symptoms significantly, but *Madhu Shigru Aschyotana* achieved better overall outcomes, including complete cures in some patients.[10]

Evidence Summary Table: Allergic Conjunctivitis

Author / Study	Year	Study Design	Intervention	Outcome Measures	Key Findings
Udani et al.	2012	Comparative clinical study	Bilvadi Yoga Ashchyotana vs. Bilvadi eye drops	Relief in ocular symptoms, AEC, and conjunctival smear	Both effective; Ashchyotana superior in pain, dryness, itching, redness; safe
Satya Dev et al.	2016	Comparative clinical study	Pathyadi Anjana Varti vs. Madhu Shigru Aschyotana	Symptom relief (itching, heaviness, lacrimation, congestion)	Both were effective; Madhu Shigru Aschyotana showed better outcomes, including complete cures

Clinical Evidence Supporting Shalakya Interventions in Dry Eye Disease

A randomised clinical trial compared *Triphala Ghrita Tarpana* and *Goghrita Manda Tarpana* in 30 patients with dry eye syndrome.[11] Both therapies produced significant relief in gritty sensation, blurred vision, burning, photophobia, pricking pain, and congestion. *Triphala Ghrita* showed better sustained improvement during follow-up, while *Goghrita Manda* provided stronger immediate relief but had more recurrences. Overall, both were safe, effective, and offered a cost-effective Ayurvedic alternative for dry eye management.

Evidence Summary Table: Dry Eye Disease

Author / Study	Year	Study Design	Intervention	Outcome Measures	Key Findings

Timmapur & Fiaz et al.	2021	Randomised comparative trial	Triphala Ghrita Tarpana vs. Goghrita Manda Tarpana	Symptom relief (gritty feeling, blurred vision, burning, photophobia, pain, congestion), Schirmer's test, tear break-up time	Both are effective; Triphala Ghrita is better for sustained relief, Goghrita Manda has a stronger immediate effect but more recurrence; safe

Need for Community-Level Integration and Implementation Framework

Rationale for Integration

The increasing prevalence of allergic rhinitis, recurrent tonsillitis, allergic conjunctivitis, and dry eye disease among school-aged children, along with the notable occurrence of rhinitis and hormonally influenced ocular conditions in antenatal and postnatal women, necessitates a preventive and community-based approach. These disorders are chronic, recurrent, and significantly affect school performance, daily functioning, and maternal well-being. While conventional therapies provide symptomatic relief, limitations such as recurrence, long-term medication use, and restricted preventive focus highlight the need for complementary strategies. Evidence generated from Ayurvedic clinical studies supports the safety and efficacy of Shalakya interventions, providing a strong foundation for structured integration.

Integration within School Health Programs

Existing School Health Programs provide established platforms for school-based health services. Within these frameworks, evidence-based Ayurvedic interventions may be incorporated as primary supportive care or adjuncts to conventional treatment. Seasonal *Nasya* for children prone to allergic rhinitis, structured throat-care guidance for recurrent tonsillitis, ocular hygiene education for allergic conjunctivitis, and supervised *Tarpana* initiatives for dry eye syndrome can be systematically introduced under trained supervision.

Maternal and Antenatal Integration

Antenatal and postnatal clinics offer an appropriate setting for addressing rhinitis of pregnancy and hormonally induced dry eye. Gentle, pregnancy-safe *Shalakya* measures, along with dietary and lifestyle counselling, can be incorporated as supportive care within

routine maternal health services. Such integration emphasises safety, symptom control, and prevention without replacing essential obstetric management.

Standardisation of Paediatric Dosage and Protocols

The clinical application of *Shalakya* interventions in children requires clear standardisation of dosage, frequency, and procedural guidelines. Paediatric patients differ from adults in terms of mucosal sensitivity, immune response, and drug metabolism; therefore, age-appropriate dose adjustments based on classical principles of *Bala* and *Matra* must be aligned with modern safety considerations. Developing standardised protocols for procedures such as Nasya and ocular therapies—defining age limits, dose range, duration, and contraindications—will improve safety, reproducibility, and integration into institutional and community-based paediatric care.

Discussion

The increasing prevalence of allergic rhinitis, recurrent tonsillitis, allergic conjunctivitis, and dry eye disease among children, along with hormonally influenced ENT and ocular disorders in women, reflects an emerging burden within Women and Child Health. Although these conditions are not life-threatening, their chronicity, recurrence, and impact on school performance, maternal comfort, and quality of life make them significant public health concerns. Conventional therapies provide effective symptomatic relief; however, recurrence, prolonged drug exposure, and limited preventive scope remain important limitations.

The reviewed Ayurvedic clinical studies demonstrate that *Shalakya Tantra* interventions, such as *Nasya, Ashchyotana, Anjana, Tarpana*, and classical internal formulations, can reduce symptom severity, improve inflammatory parameters, and provide sustained relief in allergic rhinitis, tonsillitis, allergic conjunctivitis, and dry eye syndrome. These outcomes align with Ayurvedic principles of Dosha correction and local tissue nourishment, suggesting a broader therapeutic approach beyond symptomatic suppression. Integration through School Health Programs offers a feasible pathway for community-level implementation, provided that standardised protocols and safety guidelines are ensured.

Conclusion

The burden of recurrent ENT and ophthalmic disorders in children and women highlights the need for preventive and integrative care models within Women and Child Health frameworks. Evidence from Ayurvedic clinical studies supports the safety and therapeutic potential of Shalakya Tantra interventions in reducing symptoms and recurrence. When implemented through structured school and maternal health programs, these approaches may strengthen preventive care and offer a sustainable adjunct to conventional management. Further standardisation and larger-scale studies will strengthen their role in public health integration.

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