Frontiers in Health Informatics www.healthinformaticsjournal.com
ISSN-Online: 2676-7104
2024; Vol: 13 Issue 8 Open Access

"Snehadhara": A Decentralized Integrative Public Health Model for the Management of Developmental Disorders in Children through Ayurveda

Roshni Anirudhan[1], Suresh Kumar D.[2], Priya K.S.[3], Jai G.[4], Glady Halwin[5], Reshma R.G.[6]

[1]Professor & Head, Department of Kaumarabhritya, Government Ayurveda College, Thiruvananthapuram, Kerala, India
[2]President, District Panchayat, Thiruvananthapuram, Kerala, India
[3]Director, Indian System of Medicine, Kerala, India
[4]Principal, Government Ayurveda College, Thiruvananthapuram, Kerala, India
[5]District Medical Officer, Thiruvananthapuram, Indian System of Medicine, Kerala, India
[6]Specialist Medical Officer, Snehadhara Project.
*Corresponding Author: Roshni Anirudhan E-mail: doctoroshni@gmail.com

Cite this paper as: Roshni Anirudhan, Suresh Kumar D, Priya K.S, Jai G, Glady Halwin, Reshma R.G. (2024), "Snehadhara": A Decentralized Integrative Public Health Model for the Management of Developmental Disorders in Children through Ayurveda. *Frontiers in Health Informatics, 13(8) . 7139-7143.*

ABSTRACT

Background: *Developmental disorders—including Cerebral Palsy, Autism Spectrum Disorder (ASD), Intellectual Disability, ADHD, and speech-language impairments—pose a growing challenge in pediatric healthcare. These conditions often necessitate long-term, multidisciplinary care, which remains limited in accessibility and scope, especially in resource-constrained settings.*

Objective: *To present and evaluate Snehadhara, a decentralized public health initiative delivering integrative Ayurvedic and allied therapies for children with developmental disorders in Kerala, India.*

Methods: *Launched in 2015 by the Thiruvananthapuram District Panchayat, Snehadhara is implemented by the District Medical Officer (Indian Systems of Medicine) and technically coordinated by the Department of Kaumarabhritya, Government Ayurveda College, Thiruvananthapuram. The program offers cost-free, multidisciplinary care—including Ayurvedic therapies (with Panchakarma), Physiotherapy, Speech Therapy, and Psychological support—to children under 12 years. It began as a 20-bed inpatient facility and has expanded into a decentralized model with four satellite centers.*

Results: *To date, the program has provided over 25,000 outpatient consultations and 1,300 inpatient treatments. Clinical outcomes indicate significant improvements in gross motor function, speech and language development, and adaptive behavior. The initiative has also enhanced early diagnosis, family engagement, and continuity of care.*

Conclusion: *Snehadhara exemplifies a scalable, cost-effective, and community-anchored model for integrative developmental pediatrics. It highlights the potential of harmonizing traditional Ayurvedic care with modern therapeutic modalities in managing complex pediatric neurodevelopmental conditions within the public health system.*

Keywords: *Developmental Disorders, Public Health Initiative, Autism, Cerebral Palsy, Integrative Pediatrics, Snehadhara*

INTRODUCTION

Developmental disabilities in children form a major public health concern, with enduring impacts on individuals and their families. These conditions—encompassing motor, cognitive, communicative, and behavioral impairments such as Cerebral Palsy, Autism Spectrum Disorder (ASD), Intellectual Disability, and speech delays—often manifest early in life and demand sustained, multidisciplinary intervention for optimal outcomes.

In Kerala, early identification and rehabilitation have gained prominence through systematic population-based surveys. The Kerala Social Security Mission reported a 2.32% disability prevalence, with Thiruvananthapuram

district ranking second in the state. A large-scale screening by the Child Development Centre (CDC) involving over 100,000 children under six years revealed that 2.5% required detailed developmental evaluation. Of the 1,329 children assessed, 49.89% had developmental delay, 24.98% had speech and language delay, and 22.95% had multiple disabilities. Notably, 16.85% were diagnosed with Intellectual Disability, and other conditions such as Cerebral Palsy (8.43%), visual impairment (3.31%), and neuromuscular disorders (1.35%) were also documented—underscoring the urgent need for early and effective intervention strategies.

Although most developmental disorders are chronic and currently incurable, early diagnosis and individualized therapies can significantly improve functional outcomes. However, challenges in delivering accessible and sustained care persist, particularly in underserved settings. Ayurveda, India's traditional medical system, offers a holistic, constitution-based approach with therapies like Panchakarma, herbal medications, and behavioral interventions under Kaumarabhritya (Ayurvedic pediatrics).

In this context, the Snehadhara initiative, launched in 2015, represents an innovative public health model integrating Ayurvedic and allied therapies for children with developmental disorders. This paper presents the rationale, methodology, and outcomes of the Snehadhara program, proving the feasibility and effectiveness of a decentralized, integrative framework in delivering pediatric developmental care within the public health system.

Genesis of the Snehadhara Project

The Department of Kaumarabhritya at Government Ayurveda College, Thiruvananthapuram, has been providing pediatric Ayurvedic care for over three decades through its satellite unit at the Women and Children Hospital, Poojappura. This integrative facility, staffed by Kaumarabhritya specialists, modern pediatricians, and resident medical officers from both systems, operates round-the-clock outpatient services for both Ayurvedic and modern pediatrics, and manages a 50-bedded inpatient facility, comprising 40 beds dedicated to Kaumarabhritya and 10 beds under modern pediatrics. The modern medical team plays a vital role during emergencies, providing critical support in managing seizure episodes, hyperpyrexia, respiratory distress, and other acute pediatric conditions.

A key feature of the department is its dedicated Bala Panchakarma theatre, equipped for classical and Kerala-specific pediatric procedures, alongside a Complementary Therapy Unit offering physiotherapy and speech therapy. Notably, over 90% of inpatient admissions are children with developmental disorders such as Cerebral Palsy, Autism Spectrum Disorder, Speech and Language Delay, ADHD, Epilepsy, and Learning Disabilities. Individualized, multimodal care protocols have demonstrated clinical efficacy in improving functional outcomes.

In addition to therapeutic services, the department leads early identification efforts through a Well-Baby Clinic linked to its vaccination center and conducts regular capacity-building programs for Anganwadi and ASHA workers in collaboration with ICDS. Since 2004, it has engaged in collaborative research with premier institutions including Government Medical College Thiruvananthapuram, Sree Chitra Institute of Medical Sciences & Technology, National Institute of Speech & Hearing, Rajiv Gandhi Institute of Biotechnology, and the University of Kerala, contributing to the development of integrative protocols in developmental pediatrics.

However, critical challenges remained—such as the non-availability of essential Ayurvedic formulations in government supply and out-of-pocket costs for complementary therapies—which posed barriers to access for families from Below Poverty Line backgrounds. These systemic gaps and the growing need for comprehensive developmental care catalyzed the launch of the Snehadhara initiative in 2015, envisioned as a decentralized, integrative public health model for pediatric neurodevelopmental disorders.

Project Conceptualization and Administrative Framework (2014–2015)

In response to increasing demand for integrative pediatric care, the Department of Kaumarabhritya at Government Ayurveda College, Thiruvananthapuram, proposed the "Snehadhara" initiative to the Thiruvananthapuram District Panchayat in 2014–2015. Following an on-site assessment of clinical infrastructure and services, the project received official sanction with an initial budget allocation of ₹25 lakhs (Project No. S0293/15).

Given the college's autonomous status, administrative oversight was assigned to the District Medical Officer (ISM), while the Department of Kaumarabhritya retained technical and clinical leadership. Conceived as a cost-free, integrative care model for children under 12 years with developmental disabilities, the program combined

Ayurvedic treatment, Speech Therapy, Physiotherapy, and Behavioral Therapy within a decentralized public health framework.

OBJECTIVE

- To provide free Ayurvedic treatment to children with neurodevelopmental disorders—such as Cerebral Palsy, Autism Spectrum Disorder (ASD), ADHD, and speech delays—with the goal of reducing symptom severity and improving functional outcomes.
- To integrate complementary therapies (Physiotherapy, Speech Therapy, and Psychological interventions) within a unified, multidisciplinary rehabilitation framework.
- To ensure financial accessibility by delivering all services, including therapies and medications, entirely free of cost to families from economically weaker sections.
- To promote early identification and intervention through regular screening camps, capacity building of frontline workers, and community-level collaboration with local health and education systems.

RESULTS

Target Beneficiaries

The Snehadhara initiative primarily serves children under 12 years living in Thiruvananthapuram District, diagnosed with developmental disorders such as Cerebral Palsy, Autism Spectrum Disorder, ADHD, and speech and language delays. Beneficiaries are enrolled through collaborative screening camps conducted by the Department of Kaumarabhritya in coordination with the District Medical Office (ISM) and District Panchayat, ensuring early identification and equitable access, particularly for socioeconomically vulnerable families.

Timeline of Key Events in the Implementation of Snehadhara

- March 26, 2015 – Project Inauguration and First Screening Camp
  - Inaugurated by the Minister of Health and Family Welfare.
  - Held at Government Ayurveda College (GAC), Thiruvananthapuram (TVM).
  - Outreach via ICDS, newspaper, and social media.
  - 103 children screened by a 25-member multidisciplinary team.
  - Priority list of eligible beneficiaries created.

  June 2015 – Administrative Sanctions and Staffing Approvals
  - State Coordination Committee (a cabinet-level body overseeing programmatic implementation) sanctioned 6 technical posts -Specialist Medical Officer (Kaumarabhritya), Speech Therapist, Physiotherapist, Psychologist, 2 Panchakarma Therapists
- July 6, 2015 – Launch of Specialty Inpatient Ward
  - 20-bedded Snehadhara ward inaugurated at Women and Children Hospital Campus, GAC TVM.
  - Equipped for integrative Ayurvedic and allied therapies.
  - Procurement of furniture and equipment through DMO as per store purchase rules.
- January 27, 2017 – Launch of Satellite Centers
  - Four outpatient satellite centers inaugurated:
    - District Ayurveda Hospital, Varkala
    - Government Ayurveda Hospital, Parassala
    - Government Ayurveda Hospital, Kizhuvilam
    - Government Ayurveda Hospital, Palode
  - Staffing sanctioned: 1 Medical Officer (Kaumarabhritya) and 1 Pharmacist.
- 2017–2018 – Expansion of Varkala and Parassala subcentres
  - Introduction of Panchakarma and Complementary Therapy Units (CTUs).
  - Six new posts sanctioned by State Coordination Committe:1 Medical Officer (Kaumarabhritya), 1 Nurse (Modern Medicine), 1 Speech Therapist, 1 Physiotherapist-and 2 Panchakarma Therapists

2020–2022: COVID-19 Adaptation

- May 25, 2020 – Resumption of Inpatient Services

- After initial suspension, services resumed under COVID-19 safety protocols.
- Women and Children Hospital temporarily converted to COVID FLTC.
- Services temporarily shifted to GAC main campus.

• December 11, 2020 – Resumption of Panchakarma Therapies at Satellite Centers
• January 6, 2021 – Full Restoration of Inpatient Services
• Pandemic Measures:
- Telemedicine and remote therapy sessions initiated.
- Free distribution of Ayurvedic immunity boosters.
- Continued therapy with adjusted modalities to mitigate disruption.

2024–2025: Continued Expansion

• Approval of 3 New Satellite Centers:
- Government Ayurveda Hospital, Neyyattinkara
- Government Ayurveda Hospital, Venganoor
- Government Ayurveda Hospital, Pulimath

• Administrative approval granted, HR proposal under review of State Coordination Committee

Ongoing Activities: Community-Based Screening and Outreach

• Development of Structured Screening Program:
- Regular screening camps at subcenters and community levels.
- Developmental Assessment Card issued to all screened children.

• Capacity Building of Frontline Workers:
- Monthly ICDS-based training for ASHA and Anganwadi workers.

• Establishment of Early Detection Center:
- Located at GAC Main Campus alongside immunization clinic.
- Weekly screening sessions conducted.

• Parental Education and Empowerment:
- Community classes and workshops on home-based care and therapy adherence.

Impact (2015–2024)

Beneficiary Reach

- **Outpatient Consultations**: Over 25,000
- **Inpatient Panchakarma Beneficiaries**: Nearly 1,300
- **Annual OP average**: ~4,500
- **Annual IP average**: 150–200

Table 1: Snehadhara funding and beneficiary details

Year	Fund sanctioned	Fund utilized	Beneficiaries Total OP.	Pts availed Panchakarma
2014-15	25 Lakhs	1 Lakh		
2015-16	24 Lakhs	236631		81
2016-17	45 Lakhs	45 Lakhs	165	89
2017-18	45 Lakhs	45 Lakhs	1921	110
2018-19	70 Lakhs	6998408	3437	196
2019-20	5837015	5759834	5515	162
2020-21	5320900	4853864	2875	66
2021-22	6014137	5992587	3261	83
2022-23	70 Lakhs	6552919	4299	139
2023-24	70 Lakhs	6017966	4312	160
2024-25	73,46,815	ongoing	Ongoing	ongoing

Awards, Recognitions, and Audit Transparency

- Audit Compliance and Financial Transparency
  - Since its inception, the Snehadhara initiative has consistently passed all annual audits conducted by:
    - The Local Fund Audit Department
    - The Performance Audit Team
    - The Accountant General's Office
  - These clearances underscore the project's financial transparency, adherence to statutory norms, and robust administrative practices.
- Institutional Recognitions Linked to Snehadhara's Impact
  - The Snehadhara initiative played a pivotal role in the Thiruvananthapuram District Panchayat being awarded:
    - The Swaraj Trophy for Best District Panchayat in Kerala for three consecutive years: 2017, 2018, and 2019.
    - The Deen Dayal Upadhyaya Panchayat Sashaktikaran Puraskar (DDUPSP) for Best District Panchayat in India, also for the years 2017, 2018, and 2019
- Individual Excellence
  - Dr. Roshni Anirudhan, Project Coordinator of Snehadhara and Head of Department of Kaumarabhritya, was conferred the State Award for Best Project Coordinator (2018–2019) by the Department of Local Self Government, Government of Kerala.

CONCLUSION

Snehadhara stands as a compelling example of how Ayurveda, when thoughtfully integrated into modern therapeutic frameworks, can play a transformative role in public health. Rooted in the wisdom of traditional medicine, the initiative has, over the past decade, significantly improved the quality of life for thousands of differentially abled children through customized Ayurvedic treatments and supportive therapies. This holistic approach has not only fostered tangible health benefits but has also empowered families and strengthened community resilience. As Snehadhara enters its next phase, the expansion of its geographic reach and the development of research-backed Ayurvedic protocols are essential to its continued impact. Serving as a replicable model across the state and beyond, Snehadhara offers a powerful reminder of the untapped potential of Ayurveda—especially in areas where conventional medicine offers limited solutions.

REFERENCES

1. Government of Kerala, Social Security Mission. Disability Census 2014-15 [Internet]. 2024 Jul 15 [cited 2025 Jul 02]. Available from: https://socialsecuritymission.gov.in/2024/07/15/disability-census-2014-15/
2. Nair MKC, George B, Padmamohan J, Sunitha RM, Resmi VR, Leena ML, et al. CDC Kerala 16: Early detection of developmental delay/disability among children below 6 y--a district model. *Indian J Pediatr.* 2014 Dec; 81(Suppl 2):S170–3. Available from: https://pubmed.ncbi.nlm.nih.gov/25297644/