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Original Article

Ayurveda Section

A Scoping Review on *Shudhabala Taila*: Exploring its Healing Potential

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ABSTRACT

Introduction: *Shudhabala Taila*, an Ayurvedic oil, is used for Vata-related disorders such as insomnia, paralysis and frozen shoulder. It contains *Sida cordifolia, Sesamum indicum* and cow's milk, offering anti-inflammatory, neuroprotective and *Rasayana* effects. With increasing interest in integrative medicine, exploring its pharmacological basis and therapeutic potential is essential for broader clinical application.

Aim: To review the therapeutic potential and clinical application of *Shudhabala Taila* in managing various disorders.

Materials and Methods: This scoping review was conducted at the Department of Panchakarma, Mahatma Gandhi Ayurveda College Hospital and Research Centre, Datta Meghe Institute of Higher Education and Research (Deemed to be University) Salod (H), Wardha, Maharashtra, India, using comprehensive searches of the PubMed, Web of Science and Google Scholar databases. After carefully screening the studies, seven articles were selected. The extracted data were systematically organised and analysed to provide a comprehensive overview of the therapeutic potential of *Shudhabala Taila*. The present scoping review also emphasises the various routes of administration of *Shudhabala Taila* in treating different disorders.

Results: These studies demonstrated a notable improvement in symptoms such as tremors, stiffness, pain, hypersensitivity and spasticity. According to the analysis, *Shudhabala Taila* is just as effective- if not more so- than alternative therapies or control groups.

Conclusion: The review highlights that *Shudhabala Taila* is effective in providing symptom relief, improving quality of life and managing various health conditions. Incorporating Ayurvedic products like *Shudhabala Taila* into clinical practice can provide more holistic care. Nevertheless, further studies are required to understand its mechanism and to address the methodological shortcomings.

Keywords: Insomnia, *Ksheera*, *Panchakarma*, Parkinson's disease

INTRODUCTION

The concept of Ayurveda, an Indian system of medicine, originated in India between 2500 and 500 BC [1]. Ayurveda means "Science of Life" because healthcare in the ancient Indian system focused on individuals and their ailments. Ayurveda is also referred to as the "Science of Longevity," as it provides a framework for leading a long and healthy life [2]. Acharya Charaka states that *Taila* is the best among the drugs for the pacification of *Vata Dosha. Shudhabala Taila* is an effective Ayurvedic oil mentioned in *Sahastra Yoga Tailayogaprakarna* and is used to manage various *Vata Vyadhi* (diseases related to imbalanced *Vata*). The oil helps to balance *Vata Dosha* in the body through local application (*Abhyanga, Padabhyanga, Shiropichu*), nasal administration (*Nasya Karma*) and enema (*Basti*) [3].

Shudhabala Taila, as described in *Sahastra TailYog Prakarna*, comprises *Bala Moola* (roots of *Sida cordifolia*), *Ksheera* (cow's milk) and *Tila Taila. Bala Moola (Sida cordifolia)* possesses *Vata-Samaka* (Vata pacifying) qualities such as *Snigdha* (unctuous), *Guru* (heavy) and *Pichichila* (sticky). *Tila Taila* (Sesamum indicum) is renowned for its *Snigdha* and *Ushna* (hot) attributes, with actions that are both *Brumhana* (nourishing) and *Karshana* (reducing). This oil aids in *Brumhana* for *Vataja* conditions and *Apabahuka* (frozen shoulder) while providing the *Karshana* effect in *Vata-Kaphaja* conditions, thus supporting various therapeutic applications [4]. All the qualities needed for the equilibrium of *Vata* are present in *Shudhabala Taila* [3].

This oil is used to effectively manage various ailments such as *Nidranasha* (insomnia), *Ekanga Vata* (monoplegia), *Pakshaghata* (*diplegia*) [5], *Apabahuka* and gingival infections [6]. Understanding the possible advantages and restrictions of *Shudhabala Taila* is becoming increasingly vital as the demand for complementary and alternative therapies rises. In the *Samhitas, Bala* is employed in several formulations, such as *Dhupana* (fumigation), *Peya* (rice gruel), *Lepa* (paste application), *Basti* (enema), *Shaka, Ghrita* (clarified butter), *Taila* (oil), *Kashaya* (decoction) and Sweda (hot fomentation), for diseases like *Jwara* (fever), *Vatarakta* (gout), *Nilika* (hyperpigmentation), *Vyanga* (melasma), *Vata-Pittaja* and *Vata-Vyadhi* [7].

Bala (*Sida cordifolia*), a member of the *Malvaceae family, exhibits hypoglycaemic, analgesic, anti-inflammatory* and *anti-rheumatic* properties.

Bala is also noted for its aphrodisiac, wound-healing, hepatoprotective, anti-cancer, anti-bacterial, anti-microbial, anti-parkinsonian, Central Nervous System (CNS) depressant, cardiovascular, nephroprotective, anti-hypercholesterolemic, antioxidant and anti-nociceptive effects. According to Acharya Vagbhata and Sushruta, *Bala* is a *Prajasthapaka Dravya* (promotes fertility and reproductive health) [8].

The chemical components of *Bala (Sida cordifolia)* include ephedrine, pseudoephedrine, fatty acids, beta-phenethylamine, indole alkaloids, palmitic acid, stearic acid and β-sitosterol.

Tila Taila (Sesamum indicum) is an excellent *Vatahara Dravya*. It can be used both internally and externally. It possesses *Vyavayi* (spreading) and *Sukshama* (subtle) properties and diminishes *Vata* and *Kapha* through *Yogavahiguna* (swiftly dispersing throughout the body) and *Sukshmaguna* (penetrating through tiny pores) [8]. Acharya Charaka categorises *Tila* in the *Mahakshayas group* under *Swedopaga* (perspiration-inducing drugs) and *Purishvirajniya* (promoting proper stool formation). Sesame oil's composition includes saturated fatty acids, primarily stearic, oleic and linoleic acids [9].

Ksheera (cow's milk) is considered the best of the eight types of milk mentioned in Ayurveda. It possesses *Guna* properties such as *Sara* (nourishing), *Jeevneeya* (life-promoting), *Ojovardhakara* (increases vitality), *Dhatuvardhakara* (promotes tissue growth) and *Rasayana* (rejuvenating). It helps to pacify both *Vata* and *Pitta* [10]. Cow's milk comprises 87% water, 4.8% carbohydrates (lactose), 4% fat

and 3.4% protein, with 80% being casein and 20% whey. It also contains traces of glycoproteins, as well as 0.8% minerals (calcium, potassium, iron) and vitamins (A, B2, B12). Casein provides most essential amino acids, except methionine and cysteine.

With increasing interest in complementary therapies, it is necessary to investigate the effectiveness of *Shudhabala Taila* based on scientific evidence. The present research will assist in clarifying the clinical applications and therapeutic advantages of *Shudhabala Taila*, justifying its use in treating various disorders and further integrating it into evidence-based practice. The present review aimed to assess the therapeutic potential and clinical applications of *Shudhabala Taila* in managing different disorders. Its secondary objective is to explore the various routes of administration and critically analyse the findings from existing clinical trials related to *Shudhabala Taila's* use in clinical practice.

MATERIALS AND METHODS

The present scoping review was conducted at the Department of Panchakarma, Mahatma Gandhi Ayurveda College Hospital and Research Centre, Datta Meghe Institute of Higher Education and Research (Deemed to be University) Salod (H), Wardha, Maharashtra, India. The scoping review methodology employed in the present study followed the recommended framework of Arksey and O'Malley [11]. This scoping review maps the sources and evidence on an interesting issue to summarise and communicate the study findings. Additionally, the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews (PRISMA-ScR) were adhered to in structuring the manuscript.

Participants (Population)

The participants included in the present scoping review were individuals from diverse age groups with varied medical conditions who underwent treatment with *Shudhabala Taila*. These conditions encompassed a variety of disorders, such as Parkinson's disease, insomnia, frozen shoulder, polycystic ovarian syndrome and cerebral palsy. The review included patients from different geographical regions, including Sri Lanka and India and comprised both sexes and age groups ranging from 2 to 70 years. The participants were treated with various Ayurvedic modalities such as *Matra Basti, Nasya, Shirodhara* and *Abhyanga.*

Concept

The review highlights the relevant principles of the interventions that pertain to the current study- specifically, the application of *Shudhabala Taila* in treating several illnesses, including dosages and modes of administration.

Context

The present study included clinical trials that evaluated the efficacy and use of *Shudhabala Taila*, published in English from 2014 to the present. This timeframe allows for the collection of data that accurately reflects the topic's relevance in the modern era.

Evidence Types and Sources

Letters, comments, case studies, abstracts, editorials and qualitative research were not accepted. The search was conducted using the databases listed below:

1. Web of Science
2. PubMed
3. Google Scholar

Information Sources and Search Strategy

The research utilised the following keywords: *Shudhabala Taila, Sida cordifolia, Bala, Ayurveda* and *Panchakarma*. The initial stage of the analysis involved reading the study titles and abstracts. It was necessary to thoroughly read the selected studies to the end to determine whether they met the inclusion and exclusion criteria.

Inclusion criteria: The inclusion criteria comprised clinical trials conducted between 2014 and the present date, involving human subjects with at least one group receiving *Shudhabala Taila* as the main or supplementary treatment via any route of administration. Studies published in English with full-text availability and reported outcomes were considered.

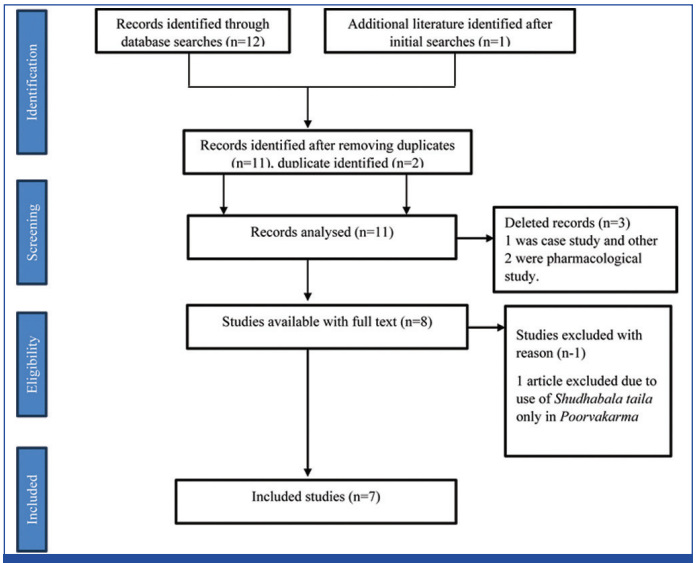
Exclusion criteria: Exclusion criteria included non clinical studies, such as animal, in-vitro and pharmacological studies using *Shudhabala Taila* in *Purvakarma*. Grey literature, including conference abstracts, editorial letters, unpublished dissertations, studies with no full-text availability, those published in languages other than English and research with no reported outcomes, was also excluded.

Data Extraction

Data on authors, publication year, study design, goals and sample size were collected from the included studies. The demographics included gender distribution, mean age, age criteria and racial/ethnic diversity. The reviewed therapies were *Panchakarma, Shaman, Sida cordifolia* and *Shudhabala Taila*. Any relevant findings were given equal weight when determining the relevance, effect direction and significance of the results.

Summary and Presentation of Data

Microsoft Excel was used to map the evidence for the *Shudhabala Taila* treatment, identifying any inconsistent findings and facilitating comparisons between different study designs. A narrative summary supplemented the tabulated data and the PRISMA-ScR criteria were followed in the final report. This strategy ensured that the study's findings were presented clearly and accompanied by a thorough analysis. The outcomes of the search and analysis results for the studies (n=11) are shown in the PRISMA flowchart [Table/Fig-1], based on the inclusion and exclusion criteria. One study was discarded as it only utilised *Shudhabala Taila* in *Purvakarma*. This scoping review examined seven publications.



[Table/Fig-1]: PRISMA flowchart.

Included Studies

Seven studies were included, each of which tested the effectiveness of *Shudhabala Taila* in managing one or more disease conditions in comparison to alternative therapies. Of these, one study was a single-blinded clinical trial. The studies were conducted in two different countries: one in Sri Lanka and the other six in India. Various treatment regimens using *Shudhabala Taila* were employed to treat different diseases.

Hewage KD and Wakkumbura HP study from 2023 evaluated the efficacy of *Shudhabala Taila* Matra Basti in treating sub-

fertility in women aged between 25 and 40 years, in comparison to *Punarnawaashtaka Phanta* and *Kanchanara guggulu* [8]. The main outcome measures for each intervention included symptom evaluation, monthly abnormalities, endometrial thickness, follicular maturity and reports from transvaginal sonography. The dosage and duration of treatment varied among the therapies.

Using the Unified Parkinson's Disease Rating Scale to measure motor and cognitive skills, Anupama KM et al., assessed *Matra Basti* with *Shudhabala Taila* for Parkinson's disease in patients aged between 40 and 70 years in 2023 [12]. Dubey RK et al., examined the effects of *Shudhabala Taila Matra Basti* and *Gridhrasi*, an alternative intervention, on pain, hypersensitivity and functional outcomes in patients aged 20 to 60 in 2021. Both studies provided information about the effectiveness of *Shudhabala Taila* by employing distinct methodologies and outcome metrics [13].

Methodological Quality of Included Studies

A rigorous assessment of the quality of the seven included studies was conducted using the 13-item Joanna Briggs Institute Critical assessment tool for randomised controlled studies [14]. The critical analysis is presented in [Table/Fig-2] [4-6,8,12,13,15].

Critical Evaluation Instrument for Randomised Controlled Studies

Q1: Was the allocation of participants to treatment groups truly random?

Q2: Was the allocation of participants to groups blinded?

Q3: Were treatment groups comparable at baseline?

Q4: Was the assignment of treatment hidden from participants?

Q5: Was it hidden from those responsible for administering the treatment to which group the participants were allocated?

Q6: Was the group to which participants were allocated hidden from the outcome assessors?

Q7: Were the different study groups treated identically, except for the referred intervention?

Q8: Was the follow-up completed? Were the differences between groups at follow-up adequately described and analysed if it was not?

Q9: Were participants analysed in the groups to which they were randomised?

Q10: Were the results evaluated in the same way for all groups?

Q11: Were the results measured reliably?

Q12: Was an appropriate statistical analysis used?

Q13: Is the study design appropriate to the topics under review and was there any evidence of deviation from the standard design of the Randomised Control Trial (RCT) during the development or review phases?

An overview of multiple clinical trials conducted in India and Sri Lanka from 2014 to the present is provided in [Table/Fig-3]. These trials investigated a variety of conditions, including subfertility, Parkinson's disease, *Gridhrai, Nidranasha, Apabahuka* and cerebral palsy. They utilised different designs and included specific age and diagnostic criteria [Table/Fig-3].

Various therapies and their corresponding control treatments, including *Shirodhara, Nasya* and *Shudhabala Taila Matra Basti* is listed in [Table/Fig-4]. The evaluation of outcomes includes symptoms, Unified Parkinson's Disease Rating Scale (UPDRS) scores, subjective and objective parameters, pain assessment, sleep quality and functional metrics, demonstrating the efficacy of these therapies in a range of conditions [Table/Fig-4] [4-6,8,12,13,15].

Included studies	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total
Hewage KD and Wakkumbura HP [8] (2023)	Y	N	Y	NC	Y	Y	Y	Y	NC	Y	Y	Y	Y	10/13
Anupama KM et al., [12] (2023)	-	N	N	N	N	N	-	Y	-	-	Y	Y	Y	4/13
Dubey RK et al., [13] (2021)	Y	N	Y	N	NC	NC	Y	Y	NC	Y	Y	Y	Y	8/13
Nishitha BL and Sreedhar S [6] (2018)	Y	N	Y	N	N	N	Y	Y	NC	Y	Y	Y	Y	8/13
Prasad K and Gopidev TG [15] (2018)	NC	N	NC	N	N	N	Y	Y	NC	Y	Y	Y	Y	6/13
Revathi K et al., [4] (2018)	-	-	-	NC	N	N	-	Y	-	-	Y	Y	Y	4/13
Deepti KA et al., [5] (2014)	Y	N	NC	N	N	NC	Y	Y	NC	Y	Y	Y	Y	7/13

[Table/Fig-2]: Critical analysis of included studies [4-6,8,12,13,15].
N=No, NC=Not clear, Y=Yes

S. No.	Included studies	Year of publication	Country	Study design	Aim	Sample size	Inclusion criteria
1.	Hewage KD and Wakkumbura HP [8]	2023	Sri Lanka	Single blind clinical trial	To evaluate the efficacy of *Shudha Bala Taila Matra Vasti* in the management of Polycystic Ovary Syndrome (PCOS) and compare it with oral drug therapy.	60 30 patients in each group	Women who are primary and secondary subfertile; age range: 25-40 years.
2.	Anupama KM et al., [12]	2023	India	Single group clinical trial	To clinically evaluate the efficacy of *Shudha Bala Taila matra basti* in the Management of *Kampavata* with special reference to Parkinson's disease	30 patients	1. Subjects fulfilling the criteria of diagnosis of *Kampavata* and Parkinson's disease. 2. Subjects aged between 40 to 70 years. 3. Subjects fit for *Matra Basti*.
3.	Dubey RK et al., [13]	2021	India	Randomised comparative clinical study.	To compare the action of *Matra Basti* with *Shuddha Bala Taila* and *Ksheerabala Taila's* treatment of *Gridhrasi* (Sciatica), evaluating the relief of pain, stiffness and other clinical features.	40 20 in each group	1. Age range: 20-60 years old. 2. Existence of the traditional *Gridhrasi* traits, such as *Toda*, *Ruk* and *Stamba* 3. A positive straight leg raising test 4. Sciatic nerve pain throughout its route 5. *Yogya Matra Basti* patients
4.	Nishitha BL and Sreedhar S [6]	2018	India	Randomised comparative clinical study.	To evaluate the efficacy of *Kavala* with *Shuddha Bala Taila* and *Dantadhavana* with *Nimba Kashta*.	30 patients, 15 in each group	1. Clinical characteristics including discomfort and sensitivity to hot, cold and sour substances 2. Moderate to severe tooth deterioration due to erosion, abrasion and attrition 3. Individuals between the ages of 25 and 60 years
5.	Prasad K and Gopidev TG [15]	2018	India	RCT	To compare the *Mahisha Ksheera* and *Shudhabala Taila Dhara* in *Nidranasha* w.s.r. Insomnia.	40 patients, 20 in each group	1. Patients of both sex, between the age group of 16-60 years. 2. Patients fulfilling the diagnostic criteria of *Nidranasha*.
6.	Revathi K et al., [4]	2018	India	Single group clinical study	To evaluate the efficacy of *Nasya* with *Shudhabala Taila* in *Apabahuka* w.s.r. to frozen shoulder	30 patients	Patients with *Apabahuka* of either sex and age group of 20-60 years were taken for the study irrespective of caste, religion etc

7.	Deepti KA et al., [5]	2014	India	Randomised comparative clinical trial	To evaluate the comparative efficacy of *Matra Basti* (enema) and *Abhyanga* (massage) with *Sweda* (sudation) in spasticity in children with cerebral palsy with *Shudhabala Taila.*	30 patients randomly divided into 2 groups (15 in each group)	Children between the ages of 2 and 12 who have either sex spastic cerebral palsy.

[Table/Fig-3]: Summary of study characteristics and treatments [4-6,8,12,13,15].
*Note: RCT: Randomised controlled trial- A type of scientific experiment that aims to reduce bias when testing a new treatment. UPDRS: Unified Parkinson's disease rating scale- A scale used to measure the severity of Parkinson's disease. SLR: Straight leg raise- A test used to assess flexibility and strength of the lower back and legs. VAS: Visual analogue scale- a measurement instrument for subjective characteristics or attitudes that cannot be directly measured.
ROM: Range of motion- The full movement potential of a joint, typically measured in degrees.

Reference	Proportion of men/women	Treatment	Control	Outcomes	Results
Hewage KD et al., [8]	Not applicable	*Shudhabala taila Matra basti* 60 ml for 7 days after cessation of menses along with Two pills of *Kanchanara guggulu* and *Punarnawaashtaka* Phanta with water, twice a day.	*Punarnawaashtaka Phanta* and Two *Kanchanara Guggulu* tablets, twice a day with water.	Symptoms evaluation, menstrual irregularities, endometrial thickness, follicular maturity, trans-vaginal sonography reports	Oral drugs with Basti significantly improved pain, menstrual flow and bleeding.
Anupama KM et al., [12]	Not mentioned clearly	2 *Masha* of *Shatapushpa Churna* and *Saindhava Lavana* added as *Prakshepaka Dravya* to *taila*. 72 mL *matrabasti* with *shudhabala Taila*.	No control group	When evaluating the end findings, the subjective and objective metrics of the baseline and post-medication data were compared. 1. Subjective and objective parameters are given gradings and will be assessed before treatment and after treatment. 2. UPDRS assessments were done before and after treatment.	*Matra Basti* with *Shudhabala Taila* significantly reduced *Kampa, Stambha* and improved motor functions, sleep and overall UPDRS scores.
				Subjective parameters 1. *Kampa pada tala kampa* (Resting Tremors): at least in one limb. 2. *Dehabhramana* (Postural instability) 3. *Ksheena mati* (cognitive impairments) - assessed using the mini-mental scale 4 Rigidity (Sthamba) **Objective parameters** 1. Walking time 2. Marie's sign 3. *Nidrabhanga* (Insomnia)-Assessment is done using the Athens insomnia scale 4. Functional assessment-Hand grip power, foot pressure.	
Dubey RK et al., [13]	Not mentioned clearly	*Matra basti* with 72 mL of lukewarm *Ksheerbala tail* with *shatapushpa churna* 2 gm and *saindhava lavana* 2 gm	*Matra basti* with 72 mL of *Shuddhabala taila* with *shatapushpa churna* 2 gm and *saindhava lavana* 2 gm	Subjective Parameters: *Ruja pain*, *stamba*, *spandana*, *toda*, objective parameters SLR test. Grading is done in both parameters.	*Matra Basti* with *Ksheerbala Taila* showed better improvement in pain, stiffness and SLR test while *Shudhabala Taila* was more effective for *Spandana*.
Nishitha BL and Sreedhar S, [6]	Group-A 8 male and seven female, Group-B 8 female and seven male.	*Nimba Kashta Dantadhavana* for 5 min twice daily for a period of 30 days.	*Kavala Dharana* (20 mL) with Shuddha Bala Taila twice a day for 30 days.	Subjective parameter 1. Pain 2. Hypersensitivity of teeth towards cold substances 3. Tooth hypersensitivity to heated materials 4. Tooth hypersensitivity to sour compounds The VAS, a tool for translating subjective responses into acceptable numbers by providing quantitative data scorings, has objectively analysed the subjective symptoms. Goal-oriented parameters: 1. Test for cold air blast 2. Touch test 3. The test of Guttapercha	*Shudhabala Kavala* significantly reduced pain (65.6%), hypersensitivity to hot (62%), sour (71.4%) and cold air (72.4%) compared to *Nimba Kashta Dantadhavana*.
Prasad K and Gopidev TG, [15]	Female patients are predominant in the study	*Shirodhara* with *Shudhabala Taila* for 45 minutes for seven days	*Shirodhara* with *Mahishaksheera* for 45 minutes for seven days	Grading and scoring of subjective and objective criteria, i.e. 1. Total sleep duration 2. Awakening during the night 3. Sleep induction 4. The overall quality of sleep 5. Final awakening earlier than desired 6. Functioning during the day 7. Sense of well-being during the day 8. Sleepiness during the day, Associated complaints 1. *Angamarda* 2. *Moha* 3. *Shirashoola* 4. *Angamarda* 5. *Akshigaurva* 6. *Alasya* 7. *Tandra* 8. *Jrimbha*	Both groups improved insomnia. Group of *Shirodhara* with *Mahishaksheera* showed better well-being and functioning at followup. Other improvements were similar between groups.
Revathi K et al., [4]	16 male	*Nasya* with *shudhabala taila* eight *bindu* in each nostril in continuous flow (*Avichinnadhara*) for seven days	No control group	Subjective parameters like *Amsasandhi Shoola, Amsasandhi Stabdhatha*, Tenderness and objective parameters like the Range of Motion (ROM) including Abduction, external rotation, flexion and extension were assessed by using a Goniometer.	*Nasya* with *Shudhabala Taila* significantly improved tenderness, range of motion and pain.
Deepti KA et al., [5]	24 male and 6 female	*Suddha bala taila* and *matrabasti* (enema) combined for 15 days	*Sarvanga Abhyanga* using *Shudhabala Taila* and *Nadi Sweda* for 15 days	Gross Motor Classification, goniometry, muscle stretch reflexes and modified Ashworth Scale	*Matra Basti* significantly reduced spasticity ($p<0.05$) and improved functional mobility scores, while Abhyanga and *Sweda* provided short-term relief.

[Table/Fig-4]: Treatment and outcomes for various interventions [4-6,8,12,13,15].
*Note: *Shudhabala taila*: Ayurvedic medicated oil used in various treatments. *Kanchanara Guggulu*: An Ayurvedic formulation used for its anti-inflammatory properties. *Punarnawaashtaka Phanta*: A traditional Ayurvedic herbal decoction. *Shatapushpa Churna*: A powdered herbal formulation frequently used for digestive issues. *Saidhava Lavana*: Rock Salt known for its medicinal purposes in Panchakarma. *Ksheerbala Taila*: An oil used for medicinal purposes in Panchakarma. *Shirodhara*: An oil-based therapy applied to the forehead. *Mahishaksheera*: Milk from buffalo. *Nasya*: Medicinal oil used in Ayurvedic nasal treatment. VAS: Visual analogue scale, a tool used to measure subjective symptoms. SLR test: Straight Leg Raise test assesses flexibility and pain. Goniometer: A device used to measure joint angles and range of motion.

Demographic Data of Participants

The research on *Shudhabala Taila* that was included comprised participants of both sexes, aged 16 to 70, from India and Sri Lanka. The demographic range included sub-fertile women, individuals with sciatic nerve pain, patients with insomnia and Parkinson's disease, as well as children with spastic cerebral palsy. This diversity demonstrates the extensive range of studies conducted on *Shudhabala Taila*.

Treatment Results

Comparing oral medication treatment groups to those receiving only oral medication, the study noted a significant improvement in patients with polycystic ovarian syndrome regarding stomach discomfort, bleeding duration and amount. Nonetheless, the two treatment modalities showed no discernible variation in the largest follicle size and endometrial thickness [8].

Improvements from the intervention included a 50% reduction in tremors, a 48.6% reduction in rigidity and an enhancement in motor skills. These benefits may be attributed to the properties of *Bala* and the *Matra Basti* technique. Most patients (70%) reported a moderate improvement, confirming the effectiveness of the treatment strategy [12].

For several measures, the comparative study of treatment effects between Groups A and B revealed statistically negligible changes in pain, stiffness (*Stambha*), pricking sensation (*Toda*) and involuntary movement (*Spandana*). Despite the statistical insignificance, both groups displayed considerable improvement in all parameters, suggesting comparable efficacy [13].

Significant improvement was observed across several metrics, including pain alleviation, hypersensitivity to hot, cold and sour stimuli, as well as responses to tactile and cold air blast tests when comparing Groups A and B. Group-B (*Nimba Kashta Dantadhavana*) demonstrated better results across these measures than Group-A (*Kavala Dharana* with *Shudhabala Taila*) [6].

In cases of *Nidranasha*, both groups were deemed effective; however, the seven-day post-treatment findings revealed minimal statistical differences between the groups. According to the 21-day follow-up, Group-B exhibited statistically significant differences in nighttime awakening and early final awakening compared to Group-A. This suggests that *Mahishaksheera Shirodhara* is less effective than *Shudhabala Taila Shirodhara* [15].

Following *Nasya* with *Shudhabala Taila* treatment, the study showed statistically significant improvements in both subjective and objective parameters for patients with frozen shoulders ($p<0.0001$). A notable reduction in discomfort and tenderness, along with an improved range of motion, contributes to the effectiveness of this intervention, indicating the need for further research before it can be implemented in a clinical setting [4].

When comparing *Matra Basti* to *Abhyanga* and *Sweda*, the study discovered statistically significant benefits in decreased stiffness in patients with cerebral palsy. *Matra Basti* effectively controlled spasticity, as significant differences in muscle tone ($p=0.05$), as measured by the Modified Ashworth Scale and Gross Motor Classification, were observed [5].

Adverse Events

Despite a thorough search and synthesis of the literature, none of the studies included in this scoping review documented any adverse effects related to the therapies or phenomena under assessment. Several factors, such as the nature of the research topic, publication bias, or the primary outcome measures of the included studies, could account for the lack of adverse event reporting.

DISCUSSION

The primary objective of the present scoping review is to understand the practical use of *Shudhabala Taila* for managing various ailments through different administration routes. The use of *Shudhabala Taila* in treating several disorders has been investigated in clinical trials conducted between 2014 and the present. The authors included and examined seven trials covering illnesses ranging from cerebral palsy to Parkinson's disease. *Shudhabala Taila* has been shown to have beneficial therapeutic effects in addressing various ailments, including tremors, stiffness and pain. It restores physiological harmony and balances the *Doshas* due to its properties in *Vata-Shamana, Brumhana* (nourishing) and *Rasayana* (rejuvenating) [8].

Studies that compared the effectiveness of *Shudhabala Taila* with other therapies revealed statistically significant differences in treatment efficacy.

Clinical implications: Patient care and quality of life are greatly enhanced by the observed improvement in clinical measures. *Shudhabala Taila* has been shown to have a significant beneficial impact on the symptoms of musculoskeletal ailments, neurological disorders and gynaecological issues [12,13]. *Bala* has been described by *Acharya Sushruta* and *Vaghbhata* as *Prajasthapaka Dravya* [8]. Instead of opting for hormone treatments and medications, patients may have the choice to manage multiple ailments using holistic and herbal medicine.

According to Falcão et al., *Sida cordifolia* leaves exhibit anti-inflammatory properties, while root extracts can inhibit angiotensin-converting enzymes that affect blood pressure (Barbosa-Filho et al., 2006) [16].

As stated in the Ayurvedic Pharmacopoeia, *Shudhabala Taila* benefits *Nashta Artava* (anovulatory cycle) and can be utilised in *Matra Basti* (medicated oil enema). The primary ingredient of *Shudhabala Taila* is *Bala* (*Sida cordifolia*). Cow's milk, which is a key component of this oil, assists in treating polycystic ovarian disease through its nourishing and revitalising properties while balancing vitiated *Pitta* and *Vata Dosha* [8]. Tyrosine, abundant in this oil, enhances the synthesis of dopamine, a neurotransmitter vital for motor function and aids in treating Parkinson's disease. Its antioxidant and anti-inflammatory properties combat oxidative stress and reduce neuroinflammation, which are significant factors in the onset of Parkinson's disease [12]. *Matra Basti* is beneficial for ailments related to *Vata* and *Shudhabala Taila* alleviates *Gridhrasi* (sciatica) symptoms due to its *Vatahara* and anti-inflammatory qualities [13].

The oil's constituents possess *Madhura Vipaka, Snigdha Guna* and *Balya* (strengthening) properties, which help to balance and release Vata Dosha, the primary cause of Dantaharsha (dentin hypersensitivity) [6]. *Shudhabala Taila's Vatapittahara* characteristics improve *Nidranasha* (insomnia), whereas *Shirodhara* (an Ayurvedic therapy) using this oil soothes the *Sanjanavaha Srotas* (nervous pathways) and encourages sleep [15]. It can potentially alleviate *Apabahuka* at certain levels of the nervous system due to its *Vataghna* and *Brimhana* qualities [4].

Abhyanga (oil massage) enhances muscle strength, joint stability and nerve conductivity by stimulating synaptic activation and eliminating toxins. *Basti* reduces *Vata Dosha* by nourishing the *Dhatus* through rectal absorption. *Swedana* alleviates tight joints resulting from cerebral palsy by clearing blockages and reducing *Vata* and *Kapha* [5].

Shudhabala Taila, which contains *Bala* (Sida cordifolia), *Tila Taila* (Sesamum indicum) and *Ksheera* (cow's milk), exhibits strong anti-inflammatory, analgesic and *Vata*-balancing activities. Its bioactive constituents, such as ephedrine and fatty acids, promote nerve function, prevent inflammation and enhance therapeutic activity in musculoskeletal and neurological disorders.

As noted in the present scoping review, *Shudhabala Taila* demonstrates extensive therapeutic value in treating musculoskeletal, gynaecological, gingival and neurological diseases. Its various administration channel- *Abhyanga* (local application of oil), *Nasya* (nasal) and *Basti* (enema)- facilitate targeted therapy, increasing

absorption and efficacy. These methods allow for deeper penetration, yield systemic effects and exhibit no significant side-effects in research, making it a safe, integrated treatment for comprehensive, holistic therapy.

As mentioned earlier, *Shudhabala Taila* exhibits remarkable therapeutic potential in managing neurological, musculoskeletal and gynaecological disorders due to its *Vata*-balancing, anti-inflammatory and neuroprotective effects. Its inclusion in *Panchakarma* has improved mobility, pain relief and nervous system function. Although current studies emphasise its clinical advantages, well-planned randomised controlled trials are needed to confirm its efficacy and establish its status as a reliable adjunct in integrative medicine.

Limitation(s)

There was some ambiguity in the blinding, allocation and follow-up processes and the methodological quality of the included studies varied.

CONCLUSION(S)

The therapeutic benefits of *Shudhabala Taila* for a range of ailments were thoroughly examined in this scoping review, fulfilling the primary objective of the present study. Additionally, the review addressed the secondary aim by investigating various administration routes and critically examining the outcomes from current clinical trials concerning its application in clinical practice. The results indicate significant potential for treating neurological, gynaecological and musculoskeletal conditions. Despite differences in study design and participant characteristics, *Shudhabala Taila* has consistently demonstrated advantages in alleviating symptoms and enhancing quality of life. More research is needed to overcome methodological limitations and gain a deeper understanding of its mechanisms. Nevertheless, the findings highlight the potential of Ayurvedic medicine, such as *Shudhabala Taila*, in contemporary healthcare, promoting a comprehensive and individualised approach to patient care. The present study contributes to the growing body of evidence that highlights the health benefits of Ayurvedic medicine for patients.

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