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Review Article

JANU BASTI FOR KNEE OSTEOARTHRITIS: A CRITICAL NARRATIVE REVIEW OF CLINICAL EVIDENCE, MECHANISMS, SAFETY, AND STANDARDIZATION

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ABSTRACT

Janu Basti is a localized Ayurvedic procedure in which warm medicated oil is retained over the knee within a reservoir for a defined period. It is commonly used for *Janu Sandhigata Vata*, which is clinically correlated with symptomatic knee osteoarthritis but is not diagnostically identical. **Objective:** To critically synthesize clinical evidence on *Janu Basti* for knee osteoarthritis, assess its conceptual basis, plausible mechanisms and safety, and identify priorities for future research. **Methods:** A critical narrative review was undertaken using the supplied evidence set, reference tracing, Ayurvedic and biomedical literature, and targeted verification of key publications. No meta-analysis or formal quantitative risk-of-bias assessment was performed. **Results:** Published studies generally report short-term improvement in pain, stiffness, range of motion and selected functional outcomes, but most are small, open-label and procedurally heterogeneous. Comparative studies do not show consistent superiority over active interventions. Evidence for cartilage regeneration or disease modification is lacking. Safety reporting is limited, although serious adverse events appear uncommon. **Conclusion:** *Janu Basti* may be a useful non-invasive adjunct for selected patients with symptomatic knee osteoarthritis, but it should not be presented as disease-modifying therapy. Future studies should standardize formulations, temperature, exposure time, co-interventions, validated outcomes and safety monitoring.

INTRODUCTION

Knee osteoarthritis (KOA) is a chronic whole-joint disorder involving articular cartilage, subchondral bone, synovium, ligaments, periarticular muscles, and pain-processing pathways. Contemporary care emphasizes person-centred assessment, education, physical activity and exercise, weight management when appropriate, symptom-directed medicines, and referral for surgery in selected patients with persistent disability or advanced disease. The 2024 Australian Osteoarthritis of the Knee Clinical Care Standard similarly emphasizes comprehensive assessment, non-surgical management, and appropriate escalation of care. [1,25]

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Within Ayurveda, *Sandhigata Vata* is described as a *Vata*-dominant joint disorder characterized by pain, swelling, painful or restricted movement, and abnormal joint sounds. When the knee is predominantly affected, the condition is commonly termed *Janu Sandhigata Vata*. Contemporary Ayurvedic literature frequently uses *Janu Sandhigata Vata* as a clinical correlate of KOA; however, the two constructs should not be treated as diagnostically identical because they derive from different conceptual frameworks. [2–4]

Janu Basti is a contemporary local procedure in which warm medicated oil is retained over the knee within a leak-proof dough ring or other reservoir for a specified period, sometimes followed or accompanied by massage or fomentation. Published protocols differ substantially in formulation, volume, temperature, retention time, reservoir design, treatment frequency, and co-interventions. [5–10]

The purpose of this review is therefore not merely to catalogue positive findings. It is to determine what the existing evidence can reasonably establish, how much of the observed effect can be attributed specifically to *Janu Basti*, whether the procedure has a plausible contemporary mechanism, what safety concerns require standardization, and how future trials should be designed. Attention is given to active comparators and multimodal interventions, because within-group improvement cannot by itself distinguish treatment effects from regression to the mean, natural symptom fluctuation, attention effects, or non-specific thermal effects.

A further historical issue is whether *Janu Basti*, as currently practiced, is directly codified in the classical *Samhitas*. The evidence reviewed here supports a conceptual relationship with classical *Snehana* and *Swedana* principles for joint disorders but does not support presenting the modern knee-specific procedure as a directly codified classical named intervention. [2,3,5,8]

Review Methodology and Scope

This manuscript uses a critical narrative review design. The literature base includes randomized and non-randomized comparative studies, open clinical studies, pilot investigations, multimodal clinical studies, reviews, a systematic review, and a registered trial protocol. The review is intended to provide a critical evidence synthesis rather than a quantitative systematic review.

Evidence identification and search transparency

Relevant records were identified from the supplied manuscript/article set, reference-list screening, citation tracing, Ayurvedic journal records, biomedical literature cited by relevant papers, and targeted online verification of key references and recent publications. Targeted online verification of key records was performed in September 2026. A 2025 systematic review reported searches of MEDLINE, Google Scholar, PubMed Central, Cochrane Library and the Ayush Research Portal through September 30, 2024, retrieving 343 records, removing duplicates to 172, assessing 42 full texts, and including five studies.[5]

The present review should not be interpreted as having reproduced those numerical screening results. The underlying evidence set was used for contextualization and study identification, while individual recent publications were independently checked where possible. Because a complete prospective search diary, reproducible database-by-database export, and contemporaneous duplicate-screening log were not available, no PRISMA flow diagram or claim of systematic-review completeness is made. Accordingly, the review is best interpreted as a critical narrative synthesis rather than a systematic review.

Eligibility and evidence stratification

Priority was given to human clinical evidence directly involving *Janu Basti* in KOA or *Janu Sandhigata Vata*. Studies evaluating Janu Basti as one component of a multimodal Ayurvedic package were retained for contextual evidence but were not treated as direct evidence of isolated *Janu Basti* efficacy. Studies with active comparators were considered more informative for causal attribution than uncontrolled studies. Case reports and protocol papers were treated as hypothesis-generating or future-evidence sources rather than efficacy evidence.

Where two reports appeared to describe the same or substantially overlapping trial, they were not treated as independent studies. This is particularly important for the 2026 *Janu Basti* versus *Janu Dhara* publication: the same study title, intervention, sample size, authorship overlap, and Zenodo DOI appear across records, with differing bibliographic presentations and some differences in reported emphasis. The study is therefore treated as a single evidence source rather than two independent trials.[20]

Critical appraisal approach

Because the evidence is heterogeneous and the review is narrative, no Jadad, MMAT, or other numerical quality score is assigned. Instead, studies are critically appraised using design-level domains: allocation method, comparator credibility, blinding or blinded outcome assessment, sample size and precision, attrition, outcome validity, co-interventions, follow-up duration, and completeness of adverse-event reporting. This approach avoids creating a misleading aggregate score across fundamentally different study designs.

Reporting framework

The manuscript is informed by SANRA principles for narrative reviews, particularly explicit aims, search description, appropriate referencing, scientific reasoning, and structured presentation. SANRA is used here as a reporting aid rather than as a substitute for a systematic-review methodology or risk-of-bias instrument.

Ayurvedic Conceptual and Historical Foundation

Sandhigata Vata* and *Janu Sandhigata Vata

Classical descriptions of *Sandhigata Vata* include joint pain, swelling, painful or restricted movement, and abnormal joint sounds. *Sushruta's* treatment principles for *Sandhigata Vata* include *Snehana, Swedana, Upanaha, Agnikarma, Bandhana,* and *Unmardana.* These principles provide a legitimate

Ayurvedic conceptual basis for local oleation, warmth, supportive applications, and manual therapy in painful or stiff joints. [2,3,11,27]

The modern correlation with KOA is useful for translational research but should remain explicitly framed as correlation. KOA is a multifactorial whole-joint disorder, whereas Ayurvedic diagnosis incorporates a distinct pathophysiological framework involving *Dosha, Dhatu, Srotas*, and individualized clinical assessment. Maintaining this distinction improves conceptual precision.

Is *Janu Basti* a classical named procedure?

The available evidence does not support describing *Janu Basti,* in its current knee-specific form, as a directly codified named procedure in the major classical *Samhitas.* Contemporary authors generally understand it as an evolved local application of *Sneha* with sustained retention and heat, conceptually related to *Snehana, Swedana*, and localized therapeutic retention procedures. [5,8]

This historical qualification should be retained in the manuscript. It avoids retrospective attribution of a modern procedure to classical texts while preserving the defensible argument that its therapeutic rationale is compatible with classical principles used for *Vata*-dominant joint disorders.

Contemporary *Janu Basti* Procedure

Across published reports, the core procedure consists of patient assessment and positioning; construction of a leak-proof ring or reservoir around the knee; filling the reservoir with warm medicated oil; maintenance of tolerable warmth for a defined period; removal and cleaning; and, depending on the protocol, massage or subsequent fomentation. Reported exposure times include approximately 30, 35–40, and 45 minutes, while treatment courses range from approximately 7 to 21 days. [5–10]

A *Ksheerbala Taila* protocol, for example, described a black-gram dough frame around the patellar region, warm-oil retention for 35–40 minutes, periodic reheating of cooled oil, and subsequent *Nadi Sweda* for 5–10 minutes.[10] Such details demonstrate why the intervention should be treated as a composite procedure rather than as a simple topical drug exposure.

Warmth, occlusion, prolonged oil contact, manual handling, therapist attention, and co-interventions may all contribute to observed outcomes. Consequently, the label *"Janu Basti"* does not necessarily represent the same intervention across studies.

Clinical Evidence

The clinical literature is directionally encouraging but methodologically heterogeneous. The most informative evidence comes from comparative studies because within-group improvement alone cannot distinguish treatment effects from regression to the mean, natural fluctuation, attention effects, concurrent treatment, or non-specific thermal effects.

Table 1: Clinical Studies Evaluating *Janu Basti* for Knee Osteoarthritis and *Janu Sandhigata Vata*

Study/report	Design and sample	Intervention/comparator	Reported outcomes/findings	Critical appraisal
Sharma et al., 2015 [6]	Comparative; n=90	*Patra Pottali Sweda; Janu Basti* with *Dashmoolabala Taila;* combined therapy	All groups improved; combined treatment reported as more beneficial.	Positive comparative signal, but combination effects limit attribution.
Prasanth et al., 2015 [7]	Open-label comparative; n=30	*Janu Basti* vs *Janu Pichu; Murivenna*; 45 min/day × 7 days	*Janu Basti* showed greater symptom relief.	Small, unblinded active-comparator study.
Asha et al., 2018 [8]	Comparative; n=20	*Janu Basti + Patra Pinda Sweda* vs *Janu Basti + Atasi Upanaha*	Both groups improved symptoms.	*Janu Basti* cannot be isolated from adjunctive treatment.
Rakesh et al., 2020 [9]	Randomized comparative; n=40	*Janu Basti + Mahavishagarbha Taila + Asthishrinkhala* vs *Janu Basti +* glucosamine	Both groups improved; glucosamine group showed greater overall benefit.	Useful comparator evidence*; Janu Basti* was common to both groups.
Mishra & Shrivastava, 2020 [10]	Pilot; 9 knees	*Ksheerbala Taila Janu Basti* 35–40 min/day + *Nadi Sweda*	Pain, WOMAC and ROM improved.	Very small, uncontrolled and co-intervention confounded.
Akki & Mordi, 2021 [12]	Clinical study; n=30	*Devadaru Baladi Taila Janu Basti*	Categorical response reported in most	Uncontrolled; categorical outcomes

			participants.	limit inference.
Matekar, 2021 [13]	Open study; n=20	*Sahachara Taila;* 120 mL; 30 min/day × 7 days; follow-up to day 30	Pain, swelling, tenderness and walking-related outcomes improved.	Open design and limited methodological reporting.
Ashivini et al., 2022 [14]	Randomized comparative; n=60	*Chinchadi Taila* vs *Rasona Taila Janu Basti;* 7 days	*Rasona* group had a higher proportion classified as markedly improved.	Relevant to formulation selection but requires replication with validated outcomes.
Singh et al., 2023 [15]	Randomized comparative; n=30	*Janu Basti + Sahachara Taila + Adityapaka Guggulu* vs *Matra Basti + same Taila/* drug	Both improved; *Matra Basti* performed better between groups.	Important active comparator; *Janu Basti* was not superior.
Chavan et al., 2024 [16]	Randomized comparative; n=100	*Janu Basti + Tila Taila vs Janu Basti* followed by ultrasound	Combined therapy produced greater improvements.	Supports possible additive effect; does not establish standalone superiority.
Kumain et al., 2024 [17]	Randomized comparative; n=50	*Janu Basti + Upanaha vs Janu Basti* alone	Combination group improved more.	Additive effect is plausible, but thermal/contextual effects remain inseparable.
Kumar et al., 2026 [20]	Comparative; n=40	*Shuddha Bala Taila Janu Basti* vs *Janu Dhara;* 14 days	Both groups improved; between-group superiority was mainly reported for stiffness.	Direct active comparator; small/open-label study. Duplicate bibliographic reports were not counted separately.
Pallavi et al., 2026 [21]	Comparative; n=40	*Mahasneha* vs *Mahanarayana Taila as Matra Basti + Janu Basti*; *TrayodashangaGuggulu*	Both groups improved; *Mahasneha* showed greater symptom improvement.	Relevant to formulation selection, not standalone *Janu Basti* efficacy.

Pain and stiffness

Pain and stiffness are the most consistently reported outcomes. Open and comparative studies repeatedly describe reductions after treatment, including studies using *Ksheerbala, Sahachara, Devadaru Baladi, Chinchadi, Rasona, and Shuddha Bala* formulations.[7,10,12–15,20] The direction of effect is clinically plausible, but most studies rely heavily on within-group comparisons. Statistical significance within a treatment group does not establish superiority over placebo, usual care, or another credible local intervention.

Function, range of motion, and walking

Functional outcomes have also improved in several reports. The *Ksheerbala Taila* pilot reported improvement in WOMAC and knee range of motion, while multimodal studies have reported improvements in walking and function.[10,23] The 2023 comparison with *Matra Basti* is particularly informative because both groups improved, with the *Matra Basti* group performing better on between-group assessment.[15] These findings support possible symptomatic and functional benefit but do not establish superiority over other Basti or rehabilitation strategies.

***Janu Basti* versus other active interventions**

Comparative evidence provides a more cautious picture than uncontrolled reports. *Janu Basti* showed favorable results against *Janu Pichu* in one small open-label study and was reported as superior mainly for stiffness in a 2026 comparison with *Janu Dhara*.[7,20] Conversely, *Matra Basti* produced greater overall improvement than *Janu Basti* in the 2023 study, while addition of *Upanaha* or ultrasound appeared to improve outcomes beyond *Janu Basti* alone.[15–17] The current literature therefore supports *Janu Basti* as a potentially useful component of treatment, but not as a consistently superior modality.

Multimodal Ayurveda and indirect evidence

Several studies evaluate *Janu Basti* within broader therapeutic packages that include oral medicines, *Basti, Marma* therapy, *Nadi Sweda*, or home care. Such studies may be relevant to integrative practice but should not be cited as direct evidence for isolated *Janu Basti*. [23,24,28]

Structural outcomes

Current evidence does not establish cartilage regeneration, restoration of joint space, or prevention of radiographic progression. In a comparative clinical study of *Agnikarma* for knee *Sandhigata Vata,* radiographic osteophytes and joint-space reduction were reported as unchanged after treatment; moreover, the intervention was *Agnikarma* rather than *Janu Basti* and therefore cannot provide evidence for structural effects of *Janu Basti*.[26] Structural claims regarding *Janu Basti* should remain hypotheses until evaluated using standardized imaging and appropriate controls.

Patient-reported outcomes

Validated instruments such as WOMAC or KOOS are preferable to study-specific symptom scales when comparison with contemporary KOA research is intended. Future trials should prespecify a validated patient-reported outcome, a pain numerical rating scale, a global patient assessment, and responder analyses in addition to mean change. Rescue analgesic use should also be quantified.

Mechanistic Plausibility

Mechanistic claims in the *Janu Basti* literature range from local *Snehana* and *Swedana* effects to transdermal delivery and joint nourishment. A contemporary interpretation should separate plausible physiological effects of heat, touch, occlusion, and movement from speculative pharmacological claims.

Table 2: Proposed Mechanisms of Action of *Janu Basti* and Current Level of Evidence

Proposed mechanism	Interpretation	Evidence status
Sustained local warmth	May increase superficial blood flow, alter connective-tissue extensibility, reduce protective muscle guarding and modulate nociceptive input.	Plausible; contribution should be tested against matched thermotherapy.
Thermal analgesia / sensory modulation	Thermal stimulation can influence pain perception and tolerance to movement.	Plausible; not specific to medicated oil.
Occlusion and emollience	Oil retained under a reservoir prolongs skin contact and may increase stratum-corneum hydration.	Plausible for superficial effects; does not demonstrate delivery to cartilage.
Periarticular neuromuscular effects	Warmth, positioning and gentle handling may reduce periarticular guarding and facilitate movement.	Plausible, particularly for stiffness and movement limitation.
Formulation-specific pharmacology	Individual *Taila* formulations may contain biologically active constituents.	Requires chemical characterization, pharmacological evidence and controlled clinical comparisons.
Deep transdermal delivery	Some reports propose penetration of medicated-oil constituents into joint tissues.	Clinically meaningful delivery to articular cartilage is unproven in humans.
Contextual effects	Therapist contact, attention, expectancy, relaxation and treatment setting may influence patient-reported outcomes.	Likely relevant; requires attention-matched or credible sham comparison.

The most defensible mechanistic model is therefore a composite local intervention dominated by thermal, sensory, periarticular, occlusive and contextual effects. The hypothesis that oil constituents directly reach articular cartilage at clinically meaningful concentrations should not be presented as established evidence.

Safety and Contraindications

Published *Janu Basti* studies generally report few serious adverse events, but the evidence is insufficient to define a reliable safety profile because samples are small and adverse-event surveillance is inconsistently described. The principal foreseeable risks are local and procedural.

Table 3: Potential Risks Associated with *Janu Basti* and Proposed Risk-Mitigation Measures

Potential risk	Likely mechanism	Risk-reduction strategy
Thermal burn or blister	Excessive temperature, prolonged exposure, inadequate monitoring	Measure oil/skin-contact temperature; prespecify an operating range; stop for burning or excessive discomfort.
Contact dermatitis or allergy	Sensitivity to sesame oil or herbal constituents	Record allergy history and exact formulation; consider patch testing when clinically appropriate.
Local infection	Poor hygiene or contaminated materials	Use clean/disinfected materials; avoid compromised or infected skin.
Leakage/slipping	Poor seal or excessive volume	Standardize reservoir dimensions and sealing; protect surrounding skin and floor.
Positional discomfort/dizziness	Prolonged posture or heat exposure	Support limb and monitor patient throughout procedure.
Confounding safety signal	Concurrent oral medicines/procedures	Record co-interventions and adverse events separately.

Contraindications and Clinical Precautions

Reasonable exclusions for research and clinical governance include active skin infection, significant open wounds at the treatment site, known allergy to the formulation, inability to tolerate local heat, uncontrolled acute inflammatory or septic arthritis, major acute trauma, and other situations in which prolonged local heat or occlusion is inappropriate. Red-flag symptoms marked acute inflammation, unexplained joint swelling, systemic symptoms, or atypical presentations warrant appropriate conventional assessment before a local procedure is undertaken.

Safety claims should be limited to the evidence actually available: serious adverse events appear uncommon in the small, published samples, but absence of reported events is not equivalent to proof of safety.

Standardization Framework for *Janu Basti*

Procedural heterogeneity is a major barrier to interpretation. Future trials should define *Janu Basti* as a complete intervention package and report it with sufficient precision for independent replication. Temperature should be treated as a measurable exposure rather than a descriptive term such as "lukewarm." The *Taila* should be documented as an investigational product, including identity, quality, batch and storage conditions.

Table 4: Proposed Standardization Framework for Reporting and Delivering *Janu Basti* in Clinical Research

Domain	Minimum reporting requirement
Diagnosis/severity	Clinical diagnostic criteria; laterality; symptom duration; KOA severity; Kellgren–Lawrence grade when imaging is used.
Taila specification	Exact formulation; classical/pharmacopoeial reference; manufacturer; batch; production date; storage and relevant quality specifications.
Quantity	Exact volume per knee or reservoir depth; replacement/re-warming procedure.
Temperature	Measured oil temperature at application and, where feasible, skin contact; instrument; calibration; monitoring frequency.
Reservoir/frame	Material; height; internal diameter; sealing method; anatomical placement relative to patella.
Retention duration	Exact minutes per session; predefined start and stop criteria.
Treatment schedule	Sessions per day/week; total number; treatment-free intervals.
Positioning	Patient position; knee angle; limb support; movement restrictions.
Pre-/post-procedure steps	*Abhyanga, Swedana,* massage, cleaning and other steps described separately.
Co-interventions	*Upanaha, Nadi Sweda, Patra Pinda Sweda*, oral medicines, exercise, diet,

	physiotherapy and rescue analgesics.
Outcomes	WOMAC or KOOS; pain NRS/VAS; stiffness; ROM in degrees; function; quality of life; global response.
Safety	Prospective adverse-event definitions, severity grading, attribution and participant-level reporting.
Follow-up	At least 4–12 weeks for persistence; 3–6 months for durability; longer for structural hypotheses.
Mechanistic endpoints	Biomarkers or quantitative MRI only when linked to a prespecified mechanistic hypothesis.

Positioning Janu Basti with in Evidence-Based Koa Care

Janu Basti should not be presented as a substitute for established KOA management. Contemporary care emphasizes education, physical activity and exercise, weight management when appropriate, and evidence-based pharmacological and surgical options according to clinical need.[1,25] In an integrative setting, *Janu Basti* may reasonably be considered a localized, non-invasive adjunct for selected patients who tolerate local heat and the chosen formulation.

The most supportable clinical claim is symptom-oriented: short-term reductions in pain or stiffness and improved movement may occur. The current evidence does not justify claims of cartilage regeneration, reversal of osteoarthritis, restoration of joint space, prevention of knee replacement, or disease modification.

Patients with stiffness-dominant or movement-limited KOA may be a useful population for hypothesis-driven trials because stiffness and range of motion recur as outcomes. This should be prospectively tested rather than described as a proven responder phenotype.

Priorities for Future Research

- Conduct adequately powered, multicentre randomized trials with concealed allocation and blinded outcome assessment.
- Use a credible attention-matched sham or active local comparator to estimate the contributions of touch, expectancy, therapist attention and procedure context.
- Compare standardized *Janu Basti* with standardized thermotherapy alone to separate the contribution of medicated oil from the thermal component.
- Use factorial or dismantling designs to test *Taila* formulation, temperature, retention time and adjunctive procedures independently.
- Prespecify WOMAC or KOOS as a primary outcome and include pain intensity, global assessment, function and responder analyses.
- Quantify rescue analgesic use and record all co-interventions prospectively.
- Measure and report actual treatment temperature rather than subjective descriptors.
- Authenticate formulations and report batch testing, storage and stability information.
- Follow participants for at least 3–6 months when evaluating symptomatic durability and use longer follow-up for structural hypotheses.
- Use standardized quantitative MRI or other structural endpoints only when disease modification is explicitly hypothesized.
- Register trials prospectively and report randomized studies according to CONSORT and applicable guidance for non-pharmacological interventions.
- Include feasibility, acceptability and health-economic outcomes if wider implementation is proposed.

Limitations of the Current Evidence and of this Review

The evidence base is limited by heterogeneity in sample size, diagnostic criteria, *Taila* formulation, treatment duration, temperature, reservoir construction, co-interventions, outcome instruments, and follow-up. Many studies are open-label and single-centre, with limited or no blinded outcome assessment. Several combine *Janu Basti* with other Ayurvedic or physical modalities, making causal attribution difficult.

Bibliographic instability is an additional concern. The 2025 systematic review identified a larger literature pool than the number of studies meeting its restrictive eligibility criteria, illustrating that publication volume should not be equated with certainty of evidence.[5] Recent 2026 records also require careful verification because at least one *Janu Basti* versus *Janu Dhara* study appears in more than one bibliographic presentation. The present review therefore treats these records as a single evidence source rather than independent trials. [20]

The review itself has limitations. It is a critical narrative synthesis rather than a prospectively

registered systematic review; no formal meta-analysis was performed; and the available evidence did not permit a validated study-level risk-of-bias score to be applied consistently across all reports. The qualitative confidence categories below are author judgments and should not be interpreted as formal GRADE ratings.

Table 5. Qualitative Assessment of the Current Evidence for *Janu Basti* in Knee Osteoarthritis

Evidence domain	Confidence	Interpretation
Short-term pain relief	Low to moderate	Direction of effect is generally favorable, but risk of bias, imprecision and limited controls remain substantial.
Stiffness and ROM	Low to moderate	Repeatedly reported and physiologically plausible; direct superiority remains uncertain.
Functional improvement	Low	WOMAC, walking and mobility often improve, but co-interventions and small samples limit certainty.
Taila-specific superiority	Very low	Different formulations are used and comparative formulation evidence is sparse and heterogeneous.
Janu Basti vs *Matra Basti/ Janu Dhara*	Low	Active comparator studies provide useful signals but are small and largely open-label.
Disease modification/ cartilage regeneration	Very low/ unproven	No convincing controlled human evidence demonstrates structural regeneration or prevention of progression.
Safety	Low	Few serious events are reported, but systematic adverse-event surveillance is inadequate.
Cost-effectiveness	Insufficient	Formal health-economic evidence is lacking.

Note: Confidence categories are qualitative author judgments based on study design, risk of bias, imprecision, consistency, directness and intervention heterogeneity; they are not formal GRADE ratings.

Table 6: Proposed Tidier-Aligned Reporting and Standardization Checklist for *Janu Basti* Research

Domain	Element	Minimum requirement
Participant selection	Diagnosis and severity	Clinical criteria; laterality; symptom duration; KOA severity; Kellgren–Lawrence grade when imaging is available.
Investigational product	*Taila* specification	Exact formulation; reference source; manufacturer; batch; production date; storage; quality specifications.
Investigational product	Volume/depth	Exact oil volume per knee or reservoir depth; re-warming/replacement protocol.
Procedure	Temperature	Measured temperature at application/skin contact; instrument; calibration; monitoring frequency.
Procedure	Frame/reservoir	Material; height; internal diameter; seal; anatomical placement.
Procedure	Duration/schedule	Exact retention time; start/stop criteria; sessions per day/week; total course.
Procedure	Positioning	Patient position; knee angle; limb support.
Procedural context	Adjunctive steps	*Abhyanga, Swedana*, massage, cleaning and other steps reported separately.
Co-interventions	Concurrent treatment	*Upanaha, Nadi Sweda, Patra Pinda Sweda,* oral drugs, exercise, diet, physiotherapy and rescue medication.
Outcomes	Validated instruments	WOMAC/KOOS; pain NRS/VAS; stiffness; ROM in degrees; function; quality of life; global response.
Follow-up	Timing	At least 4–12 weeks for persistence; 3–6 months for durability; longer for structural hypotheses.
Safety	Adverse-event tracking	Prospective definitions, grading, attribution and participant-level reporting.
Mechanistic endpoints	Exploratory measures	Biomarkers or quantitative MRI only when linked to a prespecified mechanistic hypothesis.

Note: This checklist is proposed for future Janu Basti clinical research. It is not a validated reporting guideline and should not be confused with established reporting standards. Its purpose is to improve intervention reproducibility and facilitate comparison across studies.

CONCLUSION

Janu Basti occupies a clinically interesting position at the interface between traditional Ayurvedic local therapy and contemporary integrative musculoskeletal care. The available literature provides a broadly consistent signal of short-term improvement in pain, stiffness, tenderness, and selected functional outcomes. However, confidence remains limited because the evidence is dominated by small, open-label and procedurally heterogeneous studies, and because many interventions include additional therapies.

Comparative evidence is especially informative. *Janu Basti* may be beneficial without being consistently superior to *Matra Basti, Janu Dhara*, or other active modalities. The most credible mechanistic interpretation is a composite local effect involving sustained warmth, superficial sensory modulation, periarticular relaxation, occlusion/emollience, and contextual therapeutic factors. Direct delivery of medicated-oil constituents into articular cartilage, cartilage regeneration, restoration of joint space, and disease reversal remain unproven.

Safety appears provisionally favourable in published reports, but larger studies with prospective adverse-event surveillance are needed. Future research should move beyond repeated uncontrolled efficacy reports toward reproducible interventions, measured thermal exposure, authenticated formulations, credible controls, validated outcomes, blinded assessment, explicit co-intervention reporting, and meaningful follow-up. Under these conditions, *Janu Basti* can be evaluated fairly as a potentially useful adjunct within patient-centred KOA care rather than as a replacement for evidence-based management.

Author contributions: The author conceptualized the review, conducted the literature identification and critical appraisal, synthesized the evidence, drafted the manuscript, revised the manuscript critically for important intellectual content, and approved the final version for publication

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