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"Less Pain, Better Healing": Addressing Postpartum Perineal Pain in Rural India through Evidence-Based Episiotomy Suturing

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Abstract

Background & context. Postpartum perineal pain is one of the most common morbidities after vaginal birth. In India—where **~89%** of births are now institutional (and ~87% even in rural areas)—perineal trauma from episiotomy or spontaneous tears affects large numbers of new mothers, with consequences for mobility, breastfeeding, continence, sexual health, and mental wellbeing. Global guidance discourages routine episiotomy and emphasizes correct repair, yet studies from Indian settings continue to report high and variable episiotomy rates and gaps in repair technique, supplies, and training, especially in rural facilities. (dhsprogram.com, PMC, BioMed Central)

Objective. To synthesize current global and India-specific evidence on postpartum perineal pain and evaluate how **proper episiotomy suturing**—technique, materials, and implementation—can reduce pain and complications in **rural healthcare** settings.

Methods. A narrative review of peer-reviewed studies, guidelines (WHO, NICE, RCOG, FOGSI), Indian government policies (MoHFW, NHM/LaQshya, IPHS), program evaluations (Dakshata, Manyata), and credible educational media (Global Health Media, RCOG/OASI). Database and web searches emphasized 2020–2025 evidence with Indian context prioritized; older seminal trials were included for technique/materials. (WHO Apps, NICE, rcog.org.uk, National Health Mission, BioMed Central, Global Health Media Project)

Key findings. (1) **Technique matters**: continuous (non-locking) layered repair reduces short-term pain and need for re-intervention versus interrupted sutures; **figure-of-eight** stitches should be avoided. (ScienceDirect, cochranelibrary.com, rcog.org.uk) (2) **Material matters**: rapidly absorbable synthetic sutures (polyglactin 910/polyglycolic acid) are associated with **less pain** and fewer removals than chromic catgut. (PubMed, ijrcog.org, PMC) (3) **Angle matters**: when episiotomy is indicated, a **mediolateral incision at ~60° at crowning** reduces OASI risk; angle-guiding tools improve consistency. (NICE, NCBI) (4) **Systems matter**: Rural shortages of specialists, variable adherence to protocols, and limited simulation training are key pain drivers; initiatives like **LaQshya**, **Dakshata**, **NPM/MLCUs**, and **Manyata** offer scalable pathways for improvement. (Rural India Online, National Health Mission, PMC)

Conclusions & recommendations. Reducing postpartum perineal pain in rural India requires: standardized technique/materials, angle-aware episiotomy, routine analgesia protocols, and targeted capacity-building (midwifery-led, simulation-based) within national quality platforms (LaQshya/Manyata). **Keywords:** perineal pain; episiotomy suturing; rural India; mediolateral angle; continuous repair; polyglactin 910.

1. Introduction

Global context and definition

Perineal trauma—spontaneous tears or episiotomy—occurs in most vaginal births and ranges from superficial skin injuries to obstetric anal sphincter injuries (OASIs). Episiotomy is a surgical incision of the perineum to enlarge the vaginal outlet, historically used liberally but now **not recommended routinely** for spontaneous vaginal birth by the **World Health Organization (WHO)** and other authorities. As WHO states:

> "**Routine or liberal use of episiotomy is not recommended** for women undergoing spontaneous vaginal birth." (WHO Apps)

Modern guidance converges on **restrictive, clinically indicated episiotomy** and meticulous **repair**. NICE's 2023 intrapartum care guideline details asepsis, lighting, adequate anaesthesia, structured assessment, and principles for repair; RCOG's Green-top guidance emphasizes mediolateral episiotomy when indicated (especially in instrumental births) and cautions to avoid figure-of-eight stitches that can cause tissue ischaemia. (NICE, rcog.org.uk)

Postpartum perineal pain has multidimensional impacts: **impaired mobility**, **interference with daily activities**, **delayed breastfeeding**, **dyspareunia**, and associations with mood disorders. Emerging reviews highlight persistent pain trajectories lasting months in a sizeable minority, with dyspareunia rates ranging **~12–31%** at 12–24 months postpartum across populations. (PMC, Lippincott Journals)

Indian demographics and statistics

India has seen rapid gains in facility-based births: **institutional deliveries rose to ~89% nationally (2019–21 NFHS-5)**, with **~87%** in rural areas and **~94%** in urban settings; Caesarean births rose to **21.5%** overall. These shifts concentrate perineal care within health facilities—including rural PHCs/CHCs—placing a premium on **consistent intrapartum and repair practices**. (dhsprogram.com, PMC, ~~Press Information~~ Bureau)

The limited, heterogeneous Indian literature indicates **persistently high episiotomy rates** in many tertiary and teaching hospitals, especially among primiparous women (e.g., **63.4% overall** across 18 Delhi hospitals; **~85% in nulliparas**). Community-level data from central India (2014–18) showed episiotomy use rising from **13% to 31%**, despite declining instrumental deliveries—suggesting practice patterns, not clinical necessity, often drive episiotomy. (PMC, BioMed Central)

Cultural and social context specific to India

India's postpartum practices are diverse, nuanced, and regionally varied—**North**, **South**, **East**, **West**—with layered influences of caste, class, religion, and family structures. While many families value "confinement" and traditional remedies, early ambulation and pain-sensitive care after perineal repair are essential for **breastfeeding**, **hygiene**, **bonding**, and **pelvic floor function**. Clear counselling in local languages (Hindi, Bengali, Marathi, Tamil, Telugu, Kannada, Malayalam, Odia, Gujarati, Punjabi, Assamese, etc.) is crucial to align expectations, dispel myths (e.g., that pain is inevitable and untreatable), and promote wound care, pelvic floor exercises, and when to seek help. National programs like **HBNC/HBYC** rely on ASHAs and CHOs for early postnatal follow-up—an important touchpoint to assess perineal pain in rural households. (National Health Mission)

Problem statement and research objectives

Despite guidance against routine episiotomy and robust evidence on **suturing technique/materials**, postpartum perineal pain remains common in India. Contributing factors include high episiotomy use, **suboptimal suturing technique**, inconsistent supply chains (e.g., availability of rapidly absorbable synthetics), and **gaps in training/supervision** in rural facilities facing severe HRH shortages. This article asks:

1. **Biological/technical**: Which suturing techniques and materials best reduce postpartum pain, and how does episiotomy angle influence outcomes?
2. **Sociocultural**: What Indian-specific beliefs and practices help or hinder pain prevention and care?
3. **System response**: How well do LaQshya, Dakshata, IPHS, NPM/MLCU, and Manyata address perineal pain through better repair?
4. **Solutions**: Which **practical, low-cost** innovations are feasible in rural India to improve repair quality and reduce pain?

Scope and limitations

We center the **Indian rural** context while drawing on global comparative evidence and recent (2020–2025) guidance. Episiotomy **indications** and **prevention of perineal trauma** (e.g., massage, warm compresses) are discussed insofar as they intersect with **repair quality** and pain. While OASI management is referenced, detailed reconstructive techniques for 3rd/4th-degree tears are beyond scope. Evidence gaps persist in India regarding long-term sexual function and chronic pain gradients across states and facility types. (Cochrane, NICE)

2. Methodology

Research design and approach

A structured narrative synthesis was undertaken to integrate **clinical**, **implementation**, and **policy** evidence on episiotomy suturing and postpartum perineal pain, with a focus on **rural India**. Sources included peer-reviewed journals (Cochrane, AJOG, BJOG/Women & Birth), national guidelines (MoHFW/NHM), professional bodies (RCOG, NICE, FOGSI), and quality-improvement programs (LaQshya, Dakshata, Manyata). Educational podcasts and YouTube content were included if produced by credible professional or global health organizations relevant to low-resource training. (WHO Apps, NICE, BioMed Central, National Health Mission)

Database and web search strategy

Searches (2020–2025 priority) used terms such as *episiotomy*, *perineal pain*, *continuous suturing*, *polyglactin 910*, *mediolateral 60 degrees*, *India*, *rural*, *LaQshya*, *Dakshata*, *Manyata*, *NPM midwifery*, *HBNC/HBYC*. High-quality summaries and living guidance (NICE 2023 updates) were prioritized. Earlier seminal trials (e.g., Kettle et al.) were included for suturing technique/materials where newer syntheses still cite them as standard evidence. (ScienceDirect, cochranelibrary.com)

Inclusion/exclusion criteria

Included: peer-reviewed trials/observational studies on suturing techniques/materials and pain outcomes; guidelines (WHO/NICE/RCOG/FOGSI/MoHFW); Indian program documents; implementation evaluations; credible training videos (Global Health Media; RCOG OASI). Excluded: non-scholarly blogs and non-credible videos; older studies superseded by more recent reviews (except historically influential trials); Wikipedia. (Some mainstream press releases were used only to contextualize national program scale/coverage.) (Global Health Media Project, rcog.org.uk, Press Information Bureau)

Data analysis framework

We mapped evidence under four domains aligned to the Discussion subsections: (1) Biological/technical factors; (2) Sociocultural challenges; (3) System response and gaps; (4) Innovations and best practices. Findings were triangulated against Indian policies and rural workforce realities (RHS, IPHS). (National Health Mission, Rural India Online)

Timeline and scope

Evidence current through **15 August 2025** (India time). Newer RCTs/systematic reviews were prioritized; pre-2018 items included where still definitive (e.g., Cochrane suturing materials; continuous vs interrupted suturing). (PubMed, cochranelibrary.com)

3. Discussion

3.1 Biological/technical factors and evidence

3.1.1 Suturing technique and pain

Across RCTs and systematic reviews, **continuous (non-locking) suturing** of the vaginal mucosa and perineal muscles with a **subcuticular continuous skin closure** is associated with **less short-term pain**, less suture use, and fewer removals than interrupted techniques. The classic multicentre trials by **Kettle et al.** and subsequent updates underpin modern guidance; more recent RCTs again confirm the pain advantage of continuous methods. **Avoid figure-of-eight sutures**, which can cause tissue ischaemia. (ScienceDirect, PubMed, PMC, rcog.org.uk)

3.1.2 Suture materials and pain

Cochrane reviews and newer Indian RCTs favor **rapidly absorbable synthetic sutures** (e.g., polyglactin-910 fast; polyglycolic acid fast) over **chromic catgut**, with consistent signals of **reduced perineal pain**, **less analgesic use**, and fewer suture removals. Notably, a 2023 Indian single-blind RCT and multiple comparative studies (2021–2024) reiterate this advantage; a recent 2025 meta-analysis found **technique more important than material** for pain, but still supported synthetic absorbables over catgut for overall morbidity. In rural India's procurement cycles, specifying **fast-absorbing synthetics** is a pragmatic, evidence-aligned choice. (ijrcog.org, PubMed, MSJ Online, ScienceDirect)

3.1.3 Episiotomy type and angle

When episiotomy is **clinically indicated** (e.g., instrumental births), **mediolateral** episiotomy is preferred over midline to lower OASI risk. **Crucially, the cut should be ~60° from the midline at crowning** to account for perineal distension and yield a safer post-repair angle (~40–50°). NICE and RCOG explicitly highlight the 60-degree recommendation; StatPearls and device guidance (e.g., **Episcissors-60**) operationalize this with practical descriptions and tools. Angle-guided scissors **improve achieved angles** and may reduce OASI in several before-after series, though cost-effectiveness must be weighed for scale-up. (NICE, NCBI, PubMed)

3.1.4 Perineal protection & analgesia

Adjuncts reduce trauma and pain: **warm compresses** and **perineal massage** during second stage reduce severe tears; antenatal massage lowers episiotomy use and ongoing perineal pain. For pain relief **after** repair, guidelines endorse **acetaminophen + NSAIDs** and **ice/cold packs** for 24–72 h, reserving opioids for severe trauma; PROSPECT/ESRA discourages routine tramadol. Simple hygiene (water, regular pad changes) is emphasized. (Cochrane, BMJ Rapm, ESRA, rcog.org.uk)

3.1.5 Practical repair steps (adaptable for rural settings)

- **Asepsis, lighting, and adequate local anaesthesia** (e.g., 1% lignocaine) before systematic exam, including **rectal check** to identify occult injury. (NICE)
- **Layered continuous repair**, **no figure-of-eight**, finish skin with **subcuticular continuous**; an **Aberdeen knot** can minimize bulk and irritation. (rcog.org.uk, WISDOM)
- **Material**: default to **fast-absorbing polyglactin/polyglycolic** 2-0 for mucosa/skin; 2-0 or 0 for muscle (as per local pack availability). (PubMed, AJOG)

- **Post-repair checks**: swab/needle counts, haemostasis, two-finger introitus, and **documented angle** if episiotomy performed (audit-friendly). (NICE)
- **Antibiotics**: **not routinely indicated** for 1st/2nd-degree tears or simple episiotomy; reserve for higher-grade tears per RCOG. (PMC, Medscape)

Bottom line: Technique + angle + material together can substantially **reduce postpartum pain**—a critical win for mothers' early recovery.

3.2 Sociocultural challenges specific to India

3.2.1 Norms and expectations

In some facilities, episiotomy remains normalized for primiparas, leading to **overuse**. Studies from Delhi and quality-improvement reports reflect **high baseline episiotomy rates** (often >60% overall, >80% in primiparas), contradicting restrictive-use recommendations. Family expectations of "quick delivery," lingering provider habits, and low tolerance for perineal tears can all bias decision-making toward cutting. (PMC)

3.2.2 Language, consent, and respectful care

Women must be counselled **in local languages** about indications, risks/benefits, and **post-repair self-care** (hygiene, ice, pelvic floor exercises, warning signs). LaQshya emphasizes **respectful maternity care** and communication—both linked to higher satisfaction and adherence to analgesia and wound care. Integrating **birth companions** improves trust and helps reinforce instructions at discharge. (National Health Mission, PMC)

3.2.3 Home environment and postpartum supports

Rural women returning home may face **limited water**, **privacy constraints**, and workload expectations that aggravate pain. HBNC/HBYC home visits by ASHAs/ANMs are opportunities to assess **pain interfering with activities of daily living**, wound issues, and early breastfeeding challenges—issues that perineal pain can exacerbate. (National Health Mission, BioMed Central)

3.2.4 Respecting tradition while being scientific

Warm water or sitz baths, herbal compresses, and rest are common beliefs; clinicians can validate **comfort measures**while steering women toward **evidence-based** practices (ice in first 48–72 h; then warm baths; simple hygiene; analgesics). Use **culturally sensitive IEC** visual aids (pictorial leaflets) in state languages to bridge literacy gaps. (PMC, acog.org)

3.3 Current system response and gaps

3.3.1 Human resources in rural India

Rural CHCs face **severe specialist shortfalls**—including **~74% shortfall in obstetricians / gynecologists** — limiting the availability of advanced repair skills and supervision. Even where PHCs have doctors, rotation and workload can affect quality. These workforce realities explain why **standardized, midwife-led** perineal repair training and **simulation** are essential. (Rural India Online, PMC)

3.3.2 Quality initiatives: LaQshya, Dakshata, IPHS, Manyata, and NPM / MLCUs

- **LaQshya** targets labour room and immediate postpartum quality with SOPs, respectful care, and certification incentives across medical colleges, district hospitals, FRUs, and high-case-load CHCs. (Press Information Bureau)
- **Dakshata** (GoI + Jhpiego) scales WHO Safe Childbirth Checklist plus mentoring; job aids explicitly require a **sterile episiotomy tray** and promote adherence to intrapartum best practices. (National Health Mission, BioMed Central)
- **IPHS 2022** clarifies PHC/CHC labour room standards and notes that providers **repair episiotomy** per facility policy—an area ripe for embedding national technique/material standards. (National Health Mission)
- **Manyata** (FOGSI/Jhpiego/MSD for Mothers) certifies private facilities on clinical standards, with evaluation showing improved provider competence and adherence—an approach adaptable to rural private clinics. (PMC, BioMed Central)
- **Midwifery reforms (NPM/MLCUs)**: Since 2018, MoHFW and INC are scaling **Nurse Practitioners in Midwifery** and **Midwifery-Led Care Units**, with simulation-heavy training; this is a pivotal lever for **standardizing perineal repair** competence in rural India. (National Health Mission, Indian Nursing Council)

3.3.3 Persistent gaps

- **High and variable episiotomy rates** contrary to restrictive guidance, indicating practice inertia and system pressures. (BioMed Central)
- **Inconsistent supplies** of fast-absorbing synthetics; **catgut** persists in some procurement lists despite pain disadvantages. (PubMed)
- **Training and mentorship gaps** in perineal assessment/repair; limited **simulation** exposure in many nursing and medical curricula. (PMC)
- **Limited routine measurement**: Facilities rarely **audit episiotomy angles**, repair technique, or pain outcomes; perineal pain is seldom a tracked QI indicator.

3.4 Innovative solutions and best practices

3.4.1 Make the “right repair the default”

- **Standardize technique**: Adopt **continuous, non-locking layered repair** with subcuticular skin closure as the *default* for episiotomy/second-degree tears; prohibit **figure-of-eight** stitches. Build this into LaQshya SOPs, IPHS checklists, and Manyata standards. (ScienceDirect, rcog.org.uk)
- **Standardize materials**: Update state procurement lists to specify **fast-absorbing synthetic absorbables** (e.g., polyglactin 910 fast/polyglycolic acid fast), minimizing catgut use. (PubMed)
- **Standardize angle**: Mandate **60° mediolateral episiotomy at crowning** when indicated; use **low-cost angle aids**(laminated protractor cards) or **Episcissors-60** where affordable; train to **document achieved angle**. (rcog.org.uk, NICE)

3.4.2 Build rural capacity with simulation and micro-learning

- **Simulation bundles**: Under Dakshata/LaQshya/NPM, deploy low-cost perineal repair models (foam/animal tissue) and video-supported drills using **Global Health Media** and **RCOG OASI** resources (multilingual captions). (Global Health Media Project, rcog.org.uk)
- **Skill refreshers**: Quarterly **micro-drills** (30–45 min): perineal assessment + continuous repair + Aberdeen knot finish; audit swab counts/rectal checks. (WISDOM)
- **Peer mentorship**: Identify "repair champions" at CHC/SDH level to mentor PHC teams.

3.4.3 Embed postpartum pain care

- **Analgesia protocol**: Default **acetaminophen + NSAID**, **ice packs** for first 24–72 h; then **warm sitz baths**. Provide a **simple discharge card** in local language with pain scales and return alerts. (BMJ Rapm, rcog.org.uk)
- **No routine antibiotics** for uncomplicated episiotomy/second-degree tears; target antibiotics for OASI per RCOG. (PMC)
- **HBNC linkages**: Train ASHAs to ask functional questions ("Can you sit/void comfortably? Any foul smell/fever?"), flagging referrals early. (National Health Mission)

3.4.4 Use audits and QI to change behavior

- **Monthly run-charts**: Episiotomy **rate** by parity and indication; **angle documentation**; **technique** (% continuous); **pain at 24–48 h** (simple 0–10 scale); and **wound issues** by day-7 call-back. (BioMed Central)
- **OASI Care Bundle adaptations**: Perineal support at crowning, **consider episiotomy only when indicated**, cut at **60°**, **examine/repair competently**—elements shown to reduce severe tears without raising CS rates. (PMC)

3.4.5 Respectful, culturally sensitive counselling

- Scripted consent/explanations in Hindi/Marathi/Tamil/Telugu/Bengali, etc.; **pictorial leaflets** showing normal healing vs. warning signs. Encourage partners/birth companions to support hygiene, rest, and analgesia adherence.

3.4.6 Rural-appropriate devices and kits

- **Perineal repair kits**: sterile pack with **2–3 fast-absorbing synthetic sutures**, needles, small retractors, Luer-lock syringe with lignocaine, a **laminated 60° card**, sterile gauze, headlamp batteries—designed for **PHC/CHC** stock lists. (FOGSI)
- **Angle-assisting tools**: For high-volume units, **Episcissors-60** can operationalize angle accuracy; for **low-resource**sites, the **laminated card** is a near-zero-cost alternative. (NICE)

3.4.7 Aligning policy and quality platforms

- Incorporate **episiotomy angle + technique + material** as **explicit indicators** in LaQshya/MManyata assessments; reward facilities that drive episiotomy rates toward **WHO-aligned low levels** and document **pain outcomes**. (Press Information Bureau)

4. Conclusion

Summary of key findings. Evidence shows that **how we suture matters** for postpartum pain. **Continuous, non-locking layered repair** with **subcuticular skin closure**, using **rapidly absorbable synthetic sutures**, and avoiding **figure-of-eight** stitches consistently reduces short-term pain and need for suture removal. When episiotomy is indicated, a **mediolateral cut at ~60° at crowning** lowers OASI risk. Adjuncts—**warm compresses/perineal massage** during second stage and **postpartum multimodal analgesia**—further improve maternal comfort and function. (ScienceDirect, PubMed, rcog.org.uk, Cochrane, BMJ Rapm)

Implications for stakeholders.

- **Clinicians (OBGYNs, MOs, Staff Nurses/NPMs):** Normalize **continuous repair** and **synthetic fast-absorbing**sutures; adopt **60°** as a hard habit; audit your angles and pain outcomes. (NICE)
- **Facility managers/QI teams:** Stock **perineal repair kits**, embed **angle/technique/material** checks in LaQshya dashboards, and run **monthly micro-drills**; use **HBNC** to follow up pain/function. (Press Information Bureau)
- **State/National policymakers:** Update IPHS procurement lines to specify **polyglactin/polyglycolic fast** sutures; integrate **episiotomy rate**, **angle documentation**, and **pain at 48 h** as QI indicators; scale **NPM simulation**modules. (National Health Mission)
- **Communities and families:** Support rest, hygiene, and analgesia; encourage women to **report pain** early; respect scientific guidance while honoring local customs safely.

Future research. India needs multicentre pragmatic trials comparing **implementation packages** (angle aids + simulation + kits) on **pain**, **function**, **sexual health**, and **costs** across **North/South/East/West** rural settings; and robust **state-wise episiotomy surveillance** (akin to OASI dashboards). (PMC)

Policy recommendations.

1. **National technical standard** for episiotomy suturing (technique, material, angle) integrated into LaQshya/IPHS/NPM/Manyata. 2) **Procurement reform** to prioritize **fast-absorbing synthetic sutures** across PHCs/CHCs. 3) **Mandatory simulation** refreshers and **angle audit** in all labour rooms. 4) **Routine postpartum pain care** (acetaminophen + NSAID, ice, warm sitz baths, no routine antibiotics in simple cases) with **discharge IEC** in local languages. 5) **Include perineal pain** as a tracked PNC outcome in HBNC/HBYC. (National Health Mission, BMJ Rapm, PMC)

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