

## Article Review

### **Pain Management and Shared Decision-Making in Office-Based Gynecologic Procedures: Evidence-Based Strategies and Clinical Perspectives**

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#### **Abstract**

**Introduction:** Pain during office-based gynecologic procedures is a frequent source of patient distress and may negatively affect satisfaction, adherence to care, and willingness to undergo future procedures. Optimizing pain management and integrating shared decision-making are therefore essential components of high-quality gynecologic practice.

**Evidence Acquisition:** A narrative, non-systematic review of the literature was conducted using PubMed/MEDLINE, Scopus, Web of Science, and the Directory of Open Access Journals (DOAJ). Articles published between 2005 and 2025 were identified using keywords related to gynecologic procedures, pain management, analgesia, and shared decision-making. Randomized controlled trials, meta-analyses, observational studies, guidelines, and selected French-language publications were included. Evidence was qualitatively assessed based on methodological quality and clinical relevance.

**Results:** Pain is commonly reported during office gynecologic procedures in the absence of targeted interventions. Systemic analgesics alone appear to provide limited intra-procedural pain relief, whereas local anesthetic techniques and procedural modifications are associated with reduced pain. Vaginoscopic hysteroscopy, small-diameter instruments, and saline distension media have been associated with improved tolerance. Shared decision-making has been associated with lower perceived pain, reduced anxiety, and higher patient satisfaction across procedures.

**Conclusions:** Effective pain management in office gynecology requires a multimodal, patient-centered approach. Combining evidence-based analgesic strategies with procedural optimization and shared decision-making may improve patient experience and procedural acceptance.

**Keywords:** Office gynecologic procedures; Pain management; Intrauterine device; Endometrial biopsy; Hysteroscopy; Shared decision-making

## Introduction

Office-based gynecologic procedures, including intrauterine device (IUD) insertion, endometrial biopsy, office hysteroscopy, and cervical biopsy, are routinely performed in ambulatory women's health care. Despite their minimally invasive nature, these procedures are frequently associated with pain and anxiety, which are often underestimated or insufficiently addressed in clinical practice.<sup>1-2</sup>

Inadequate pain control has important clinical implications. It may negatively affect patient satisfaction, procedural tolerance, and willingness to undergo future gynecologic care, including contraception and cancer screening. Fear of pain represents a significant barrier to care, particularly among nulliparous women, adolescents, and individuals with prior traumatic or negative medical experiences.<sup>3-4</sup> Consequently, suboptimal pain management may contribute to delayed diagnoses and reduced adherence to recommended interventions.

Pain perception during gynecologic procedures is multifactorial and influenced by patient-related factors (such as anxiety, parity, and prior pain experiences), procedural characteristics (including cervical manipulation and uterine distension), and provider-related factors, particularly communication and technical approach. Clinical practice remains heterogeneous, and no universally accepted analgesic protocol exists for many common office procedures.

In recent years, increasing emphasis has been placed on patient-centered and trauma-informed care. Shared decision-making has emerged as a critical component of procedural pain management, promoting informed consent, respect for patient preferences, and individualized analgesic strategies.<sup>5</sup> This narrative review aims to synthesize current evidence on pain management strategies and shared decision-making in office-based gynecologic procedures, providing practical,

evidence-based guidance for clinical practice.

## Evidence Acquisition

This narrative, non-systematic review was conducted to synthesize current evidence on pain management strategies and shared decision-making in office-based gynecologic procedures. The review methodology was designed to ensure transparency and reproducibility while preserving the flexibility inherent to narrative synthesis.

## Data Sources and Search Strategy

A comprehensive literature search was performed using the following electronic databases: PubMed/MEDLINE, Scopus, Web of Science, and the Directory of Open Access Journals (DOAJ). The search covered publications from January 2000 to March 2025, in order to capture both foundational evidence and contemporary practice relevant to outpatient gynecology.

Search terms were combined using Boolean operators and included variations of the following keywords: "office gynecology," "gynecologic procedures," "pain management," "analgesia," "local anesthesia," "paracervical block," "intrauterine device insertion pain," "endometrial biopsy," "office hysteroscopy," "colposcopy," "cervical biopsy," "loop electrosurgical excision procedure (LEEP)," and "shared decision-making."

To ensure completeness, reference lists of retrieved articles, major systematic and narrative reviews, and relevant professional society guidelines were manually screened. Selected French-language publications, particularly those addressing outpatient hysteroscopy and procedural pain management, were included to broaden the scope of the evidence.

## Study Selection and Screening Process

A systematic screening process was applied to identify relevant studies. After removal of duplicate records, titles and abstracts were screened for relevance to office-based gynecologic procedures and pain-related outcomes. Articles meeting the initial screening criteria were retrieved for full-text assessment. Following full-text review, studies that met the predefined eligibility criteria were included in the final narrative synthesis.

### **Eligibility Criteria**

#### **Inclusion criteria were:**

- Original research studies, including randomized controlled trials, prospective or retrospective observational studies
- Systematic reviews, meta-analyses, clinical guidelines, and expert consensus statements
- Studies reporting procedural pain scores, analgesic efficacy, anxiety outcomes, or patient-reported experience measures
- Studies involving office-based gynecologic procedures, including intrauterine device insertion, endometrial biopsy, office hysteroscopy, colposcopy, cervical biopsy, and loop electrosurgical excision procedure (LEEP)
- Publications in English or French

#### **Exclusion criteria were:**

- Studies focusing exclusively on obstetric labor analgesia or major gynecologic surgery requiring general or regional anesthesia
- Studies not reporting clinical pain-related or procedural outcomes
- Case reports or small case series with very limited sample sizes
- Non-empirical publications lacking original clinical data (e.g., opinion pieces without supporting evidence)

### **Data Assessment and Synthesis**

Given the narrative nature of this review, no formal quantitative risk-of-bias assessment or meta-analytic statistical synthesis was performed. Instead, methodological quality and clinical relevance were evaluated qualitatively based on study design, sample size, outcome measures, and applicability to office-based practice.

Greater weight was assigned to higher-level evidence, including randomized controlled trials, meta-analyses, and recent guideline recommendations. Findings were synthesized thematically according to procedure type and analgesic strategy, with integration of shared decision-making as a cross-cutting concept influencing patient experience and pain perception.

### **Results**

#### **Determinants of Pain in Office Gynecologic Procedures**

Pain perception during gynecologic procedures is multifactorial. Patient-related factors such as nulliparity, younger age, anxiety, and prior traumatic experiences are consistently associated with higher pain scores. Procedural factors—including cervical manipulation, uterine distension, instrument diameter, and duration—strongly influence discomfort. Provider-related factors, particularly communication quality, procedural skill, and empathy, further modulate pain perception. These determinants underscore the need for individualized, multimodal approaches to pain management.

#### **Pain Management Strategies by Procedure**

##### **1. Intrauterine Device (IUD) Insertion**

Pain during IUD insertion is one of the most extensively studied areas of pain management

in office gynecology. Reported pain scores during insertion are consistently higher in nulliparous women.<sup>6</sup>

Multiple randomized controlled trials have evaluated the role of NSAIDs in reducing pain during IUD insertion. A Cochrane systematic review found that pre-procedural oral NSAIDs, including ibuprofen and naproxen, did not significantly reduce insertion pain compared with placebo, although they were associated with reduced post-procedural pain.<sup>7-8</sup>

### **Local Anesthesia and Paracervical Block**

Local anesthetic techniques have shown more consistent benefit. Randomized trials have demonstrated that paracervical block can reduce pain during tenaculum placement and IUD insertion, particularly in nulliparous women.<sup>9-10</sup> Topical cervical lidocaine gel, in contrast, has shown mixed results, with several studies demonstrating no statistically significant reduction in insertion pain compared with placebo.<sup>9</sup>

### **Cervical Ripening Agents**

Misoprostol has been extensively studied for pain reduction and ease of insertion. However, evidence suggests no benefit for pain control and an association with increased adverse effects, including cramping and nausea. Current guidelines discourage its routine use solely for pain management.

### **Non-Pharmacologic Interventions**

Non-pharmacologic strategies have gained increasing attention. Emerging evidence suggests that virtual reality simulation and other distraction techniques may reduce discomfort during IUD insertion.<sup>11-12</sup> Music therapy has also been associated with reduced pain perception in some gynecologic procedures.<sup>12</sup>

## **Shared Decision-Making in IUD Pain Management**

Shared decision-making plays an important role in IUD-related pain management. Studies indicate that women who are actively involved in choosing their pain control strategy report higher satisfaction, and patient-centered communication improves the overall experience.

## **2. Endometrial Biopsy**

Endometrial biopsy is a commonly performed office procedure frequently associated with moderate to severe pain. Nulliparity, cervical stenosis, and postmenopausal status have been identified as predictors of increased pain.<sup>13</sup>

### **Nonsteroidal Anti inflammatory Drugs (NSAIDs)**

Several randomized trials have evaluated the efficacy of NSAIDs administered before endometrial biopsy. Evidence suggests that pre-procedural NSAIDs do not significantly reduce pain during the biopsy itself but may be associated with a modest reduction in post-procedural uterine cramping.<sup>14-15</sup>

### **Local Anesthesia and Paracervical Block**

Paracervical block has demonstrated analgesic benefit. Studies have reported that administration of lidocaine paracervical block reduces pain scores during biopsy compared with no anesthesia.<sup>16</sup> Topical anesthetics applied to the cervix have shown inconsistent efficacy.<sup>14</sup>

### **Intrauterine Lidocaine**

Instillation of lidocaine directly into the uterine cavity has been investigated as an alternative analgesic approach. Some

evidence suggests that intrauterine lidocaine reduces biopsy pain, particularly when combined with cervical anesthesia.<sup>14</sup>

### **Cervical Priming Agents**

Misoprostol has been evaluated for its potential to facilitate cervical access and reduce pain. However, evidence suggests limited analgesic benefit, and routine use for pain control is not recommended.<sup>14</sup>

### **Non-Pharmacologic Interventions**

Non-pharmacologic strategies, including pre-procedural counseling and real-time verbal support, have been associated with reduced anxiety and improved patient satisfaction.<sup>5</sup>

### **Shared Decision-Making and Patient Experience**

Shared decision-making is an important determinant of patient-reported outcomes during endometrial biopsy. Women who are offered a choice of analgesic options and receive anticipatory guidance report lower pain scores and higher overall satisfaction.

## **3. Office Hysteroscopy**

Office hysteroscopy is increasingly used for diagnostic and minor operative indications; however, pain remains a major barrier to patient acceptance. Pain scores are generally higher during operative procedures and cervical instrumentation.

### **Technique-Related Factors and Vaginoscopic Approach**

Technical modifications play an important role in pain reduction. Multiple randomized trials have demonstrated that the vaginoscopic (no-speculum, no-tenaculum) approach significantly reduces pain compared with

conventional hysteroscopy. A systematic review and meta-analysis reported lower pain scores and higher procedure completion rates with the vaginoscopic technique.<sup>16–18</sup>

Use of small-diameter hysteroscopes has also been associated with lower pain scores compared with standard rigid hysteroscopes.<sup>18</sup>

### **Pharmacologic Pain Control**

- **NSAIDs:** Evidence suggests that pre-procedural NSAIDs do not significantly reduce pain during hysteroscopy, although they may modestly reduce post-procedural cramping.<sup>19</sup>
- **Local Anesthesia and Paracervical Block:** The role of paracervical block in office hysteroscopy remains debated. While some studies show no significant benefit for purely diagnostic hysteroscopy, paracervical block has demonstrated efficacy in operative hysteroscopy. Intrauterine instillation of lidocaine has shown modest benefit, particularly during operative steps such as polypectomy.<sup>20</sup>

### **Distension Media**

The choice of uterine distension medium influences pain perception. Carbon dioxide has been associated with higher pain scores compared with normal saline. Saline is therefore considered the preferred distension medium for office hysteroscopy.<sup>21–22</sup>

### **Cervical Ripening Agents**

Misoprostol has been studied to facilitate cervical entry and reduce pain, particularly in postmenopausal women. However, evidence does not support routine use for pain management in office hysteroscopy.<sup>22</sup>

### **Non-Pharmacologic Interventions**

Non-pharmacologic interventions, including music therapy and continuous verbal communication, have been associated with improved pain tolerance and patient satisfaction.

### **Shared Decision-Making in Office Hysteroscopy**

Shared decision-making has a particularly important role in hysteroscopy, where multiple pain control options exist. Studies indicate that patient satisfaction correlates strongly with perceived autonomy and communication quality.

#### **4. Cervical Procedures: Colposcopy, Cervical Biopsy, and Loop Electrosurgical Excision Procedure (LEEP)**

Cervical diagnostic and therapeutic procedures are routinely performed in outpatient settings and are commonly perceived as painful. Anxiety, nulliparity, and prior negative experiences have been identified as predictors of increased pain perception.<sup>23</sup>

### **Colposcopy and Cervical Biopsy**

- **Pain Characteristics:** Pain during colposcopy is primarily related to biopsy sampling and cervical manipulation rather than visual examination alone. Studies have reported that biopsy is associated with higher pain scores than colposcopy without biopsy.<sup>23</sup>
- **Local Anesthesia:** Local anesthetic infiltration has demonstrated clear benefit. Studies have shown that injection of lidocaine at the biopsy site reduces pain scores compared with no anesthesia. A systematic review and meta-analysis confirmed the superiority of injectable anesthesia over topical

agents for cervical biopsy pain.<sup>24–25</sup> Topical lidocaine spray or gel alone has shown limited and inconsistent efficacy.<sup>24</sup>

- **Non-Pharmacologic**

**Interventions:** Music therapy and continuous verbal reassurance have been associated with reduced anxiety and improved patient satisfaction.

### **Loop Electrosurgical Excision Procedure (LEEP)**

LEEP is associated with greater discomfort due to cervical excision and longer procedure time. Paracervical or intracervical injection of lidocaine with epinephrine is considered the standard analgesic approach for LEEP. Evidence suggests that lidocaine with epinephrine reduces intra-procedural pain compared with lidocaine alone, likely due to prolonged anesthetic effect and reduced bleeding.<sup>26</sup> Pre-procedural NSAIDs have not demonstrated significant reductions in intra-procedural pain during LEEP but may reduce post-procedural cramping. Conscious sedation has been shown to reduce pain scores but is not routinely recommended in office settings due to resource requirements.<sup>26</sup>

### **Shared Decision-Making in Cervical Procedures**

Shared decision-making is particularly impactful in cervical procedures, which are often associated with fear and anxiety related to cancer screening. Studies indicate that women who receive clear explanations and are offered analgesic choices report lower pain scores and higher satisfaction.

### **Discussion**

This narrative review synthesized available evidence on pain management strategies and shared decision-making in office-

based gynecologic procedures, including IUD insertion, endometrial biopsy, office hysteroscopy, and cervical procedures (colposcopy, biopsy, LEEP). The findings highlight several consistent themes across procedures, while also identifying important evidence gaps.

### 1. The Multifactorial Nature of Procedural Pain

Pain during office gynecologic procedures is not determined solely by tissue injury. Rather, it is modulated by a complex interplay of patient-specific, procedural, and contextual factors.<sup>1-2</sup> Patient-related factors consistently associated with higher pain reports include nulliparity, younger age, high baseline anxiety, and a history of traumatic medical or gynecologic experiences.<sup>3-4</sup> These findings underscore the importance of individualized pain assessment and the limitation of applying average pain scores to individual patients.

Procedural factors—including cervical manipulation, tenaculum placement, uterine distension, instrument diameter, and procedure duration—also significantly influence discomfort.<sup>21-22</sup> Provider-related factors, particularly communication quality, empathy, and technical skill, further modulate the pain experience.<sup>5</sup> Collectively, these determinants support the need for multimodal, patient-centered approaches rather than a single analgesic strategy.

### 2. Limited Role of Systemic Analgesics Alone

Across all procedure types, evidence from systematic reviews and meta-analyses indicates that pre-procedural oral nonsteroidal anti-inflammatory drugs (NSAIDs) provide minimal reduction in intra-procedural pain.<sup>7,8-14,15</sup> For IUD insertion, Cochrane reviews found that NSAIDs did not significantly reduce insertion pain compared with placebo,

although they were associated with modest reductions in post-procedural cramping.<sup>7-8</sup> Similar findings were reported for endometrial biopsy and office hysteroscopy.<sup>14,15-19</sup>

These results suggest that while NSAIDs may be useful for post-procedural discomfort, they should not be relied upon as primary analgesia for pain during the procedure itself. Their routine use remains common in clinical practice, but the evidence does not support significant intra-procedural benefit.<sup>4</sup>

### 3. Consistent Benefits of Local Anesthetic Techniques

In contrast to systemic analgesics, local anesthetic techniques have demonstrated more substantial and clinically meaningful pain reduction, particularly for procedures involving cervical manipulation or operative steps.<sup>9,16-18, 22-24</sup>

- **Paracervical block** has been shown to reduce pain during tenaculum placement and IUD insertion, with greater benefit observed in nulliparous women.<sup>9-10</sup> For endometrial biopsy, paracervical block is associated with lower pain scores compared with no anesthesia.<sup>16</sup> In operative hysteroscopy, paracervical block has demonstrated efficacy, although its benefit for purely diagnostic hysteroscopy remains debated.<sup>18-22</sup>
- **Intrauterine lidocaine instillation** has shown modest benefit, particularly when combined with cervical anesthesia, for endometrial biopsy and operative hysteroscopy.<sup>14-22</sup>
- **Topical anesthetics** (lidocaine gel or spray) have shown inconsistent results, with most studies reporting no significant reduction in procedural pain beyond tenaculum placement.<sup>9-14</sup>
- **Local infiltration** at the cervical biopsy site has demonstrated clear benefit, with systematic reviews confirming

superiority over topical agents.<sup>24–25</sup>

The evidence consistently supports the use of injectable local anesthetics over systemic or topical alternatives for procedures that involve cervical or uterine instrumentation.

#### **4. Procedural Modifications as High-Impact Strategies**

Technical modifications to the procedure itself often produce pain reduction comparable to or greater than pharmacologic interventions, without additional medication-related risks.<sup>17–18</sup>

- **Vaginoscopic approach to hysteroscopy** (no speculum, no tenaculum) is consistently associated with lower pain scores, higher completion rates, and reduced need for analgesia compared with conventional hysteroscopy. Systematic reviews and meta-analyses have confirmed these benefits across multiple studies.<sup>17–18</sup>
- **Use of small-diameter hysteroscopes** ( $\leq 5$  mm) has been associated with significantly lower pain scores compared with standard rigid instruments.<sup>22</sup>
- **Saline distension media** are preferred over carbon dioxide, as saline is associated with lower intra-procedural pain.<sup>21–22</sup>
- **Minimization of cervical instrumentation** (e.g., avoiding tenaculum when possible) and shorter procedure duration are also associated with improved patient tolerance.<sup>19–20</sup>

These findings have important practical implications: optimizing technique may be as important as choosing an analgesic.

#### **5. Cervical Ripening Agents Are Not Recommended for Pain Control**

Misoprostol and other cervical ripening agents have been extensively studied for

their potential to facilitate cervical access and reduce pain. However, the evidence consistently shows no benefit for pain reduction across IUD insertion, endometrial biopsy, and office hysteroscopy.<sup>4–10, 14–22</sup> Moreover, misoprostol is associated with increased adverse effects, including cramping, nausea, and gastrointestinal symptoms.<sup>10</sup> Current guidelines therefore discourage the routine use of misoprostol solely for pain management in office gynecologic procedures.<sup>4</sup>

#### **6. Non-Pharmacologic Interventions Provide Modest but Reproducible Benefits**

Non-pharmacologic strategies, including music therapy, verbal reassurance, anticipatory counseling, and virtual reality distraction, have been associated with modest reductions in pain and anxiety.<sup>11–12</sup> While these interventions rarely eliminate pain, they consistently improve patient satisfaction and the overall emotional experience of the procedure.<sup>5</sup>

Importantly, these strategies are low-risk, low-cost, and easy to implement, making them valuable adjuncts to pharmacologic and technical approaches. Their effects appear to be mediated through reduced anticipatory anxiety and enhanced sense of control.<sup>5</sup>

#### **7. The Role of Shared Decision-Making in Pain Experience**

Shared decision-making (SDM) has emerged as an important cross-cutting factor influencing patient-reported outcomes across office gynecologic procedures.<sup>26</sup> Evidence, largely from observational studies and qualitative research, consistently demonstrates associations between SDM and:

- Lower perceived pain intensity
- Reduced procedural anxiety

- Higher patient satisfaction
- Greater willingness to undergo future procedures
- Improved adherence to recommended follow-up<sup>26</sup>

Importantly, SDM does not appear to exert a direct analgesic effect comparable to pharmacologic or procedural interventions. Rather, its impact is mediated through psychosocial mechanisms: reduced anticipatory anxiety, enhanced sense of control and autonomy, improved trust in the provider, and alignment of analgesic strategies with patient preferences.<sup>26</sup>

Several studies indicate that perceived involvement in decision-making and quality of communication may influence patient-reported pain as strongly as, or more strongly than, the specific analgesic modality employed.<sup>26</sup> These findings support SDM as a complementary component of pain management that enhances patient-centered care, rather than as a standalone intervention for pain reduction.

## 8. Evidence Gaps and Methodological Limitations

Despite the large volume of published literature, several important evidence gaps remain.

**First**, high-quality evidence is unevenly distributed. The strongest evidence base exists for IUD insertion and office hysteroscopy, with numerous randomized controlled trials and systematic reviews.<sup>7-8, 17-22</sup> In contrast, evidence for pain management in cervical biopsy and LEEP is more limited, with fewer high-quality studies and smaller sample sizes.<sup>23-26</sup>

**Second**, heterogeneity in study designs, pain assessment tools (VAS, numeric rating scales, verbal rating scales), outcome measures, and patient populations limits direct comparison across studies and complicates

meta-analytic synthesis.<sup>3-4</sup>

**Third**, many studies rely on short-term outcomes measured immediately after the procedure, with limited long-term follow-up. The relationship between procedural pain and future healthcare-seeking behavior, adherence to contraception or cancer screening, and long-term patient satisfaction remains understudied.

**Fourth**, much of the evidence regarding shared decision-making is observational in nature, precluding causal inference regarding its direct effect on procedural pain intensity.<sup>5</sup> Randomized trials of SDM interventions in office gynecology are lacking.

**Fifth**, few studies have directly compared different analgesic strategies head-to-head, making it difficult to determine relative effectiveness. Most trials compare a single active intervention to placebo or usual care, rather than comparing multiple active strategies.<sup>7, 8-14</sup>

## 9. Implications for Clinical Practice

Based on the available evidence, several practical recommendations can be made:

- **Do not rely on oral NSAIDs alone** for intra-procedural pain control. Their benefit is limited to post-procedural cramping.
- **Use local anesthetic techniques** (paracervical block, intracervical injection, or local infiltration) for procedures involving cervical manipulation or operative steps.
- **Optimize procedural technique** whenever possible: vaginoscopic approach, small-diameter instruments, saline distension, and minimization of cervical instrumentation.
- **Avoid routine use of misoprostol** for pain management, as it provides no benefit and increases adverse effects.
- **Incorporate non-pharmacologic**

**strategies** (music, verbal reassurance, counseling) as low-risk adjuncts.

- **Integrate shared decision-making** into routine practice. Discuss analgesic options with patients, elicit their preferences and concerns, and provide clear, empathetic communication.

## 10. Future Research Directions

Future research should prioritize:

- Head-to-head randomized trials comparing different analgesic strategies
- Studies specifically focused on cervical procedures (biopsy, LEEP), where evidence is thinner
- Investigation of shared decision-making interventions using rigorous randomized designs

- Long-term outcomes, including impact on future healthcare utilization and adherence
- Standardization of pain assessment tools and outcome measures to facilitate meta-analysis
- Patient-centered outcomes beyond pain scores, including satisfaction, anxiety, and willingness to return for care

## Limitations of This Review

This review has several limitations that should be acknowledged. First, as a narrative, non-systematic review, the literature selection process is inherently subject to potential selection bias, and a formal quantitative risk-of-bias assessment was not performed. Although multiple databases were searched and efforts were made to include high-



**Figure 1 Pain Management Strategies by Procedure in Office Gynecology**

This flowchart illustrates evidence-based pain management approaches across common office gynecologic procedures, including intrauterine device (IUD) insertion, endometrial biopsy, office hysteroscopy, and cervical procedures (colposcopy, biopsy, LEEP). Shared decision-making (SDM) is depicted centrally, highlighting its pivotal role in tailoring analgesic strategies according to patient preferences and clinical factors. Each procedure-specific box summarizes the most effective pharmacologic, non-pharmacologic, and procedural optimization interventions, with recommendations against routine use of cervical ripening agents (misoprostol) for pain control. The lower panel synthesizes multimodal pain management strategies, emphasizing an integrated, patient-centered approach. Arrows indicate the flow from pre-procedure assessment to post-procedure follow-up, culminating in improved patient satisfaction and adherence.

quality and clinically relevant studies, it is possible that some relevant publications were not identified or included. Second, the heterogeneity of study designs, procedures, pain assessment tools, and outcome measures limited direct comparison across studies. Third, much of the evidence regarding shared decision-making is observational in nature, precluding causal inference regarding its direct effect on procedural pain intensity. These limitations underscore the need for further high-quality, procedure-specific randomized studies integrating both analgesic and patient-centered interventions.

## Conclusions

Pain during office-based gynecologic procedures is common, multifactorial, and frequently underestimated. Available evidence suggests that systemic analgesics alone provide limited intra-procedural pain relief, whereas local anesthetic techniques—such as paracervical block, intracervical injection, and intrauterine lidocaine—are associated with greater pain reduction for procedures involving cervical manipulation or operative steps. Procedural optimization, including vaginoscopic hysteroscopy, use of small-diameter instruments, saline distension media, and minimization of cervical instrumentation, has been associated with improved patient tolerance and procedural success.

Non-pharmacologic interventions, including structured communication, anticipatory counseling, and music therapy, provide modest but reproducible benefits and may enhance patient experience. Across procedures, shared decision-making represents a complementary component of pain management that may contribute to reduced anxiety, improved satisfaction, and greater procedural acceptance.

Taken together, a multimodal, patient-centered approach integrating evidence-

based analgesia, procedural optimization, and shared decision-making may be considered a valuable component of best practice in office-based gynecology.

## Conflict of Interest

The authors declare no financial or non-financial conflicts of interest related to this manuscript.

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