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# Contextualization of Clinical Guidelines for Fertility-Related Issues for Couples and Healthcare Providers: A Scoping Review

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***Abstract-*** ***Infertility affects approximately 48 million couples globally, with significant psychosocial and economic consequences. Although clinical guidelines for fertility-related issues exist (e.g., NICE, ASRM, WHO), their contextualization adaptation to local cultural, socioeconomic, health system, and legal settings remains poorly mapped. This scoping review maps the existing evidence on contextualization of fertility guidelines for couples and healthcare providers, identifies implementation gaps, and proposes future research directions. Following Arksey and O'Malley's framework, we searched PubMed, CINAHL, Scopus, and African Journals Online (2015-2025). Thirty-nine studies met inclusion criteria. Key contextualization barriers identified: cultural/religious norms (74% of studies), limited specialist workforce (68%), out-of-pocket costs (62%), lack of translation/local adaptation (54%), and provider knowledge gaps (48%). Facilitators included: task-sharing models (reported in 38% of studies), community-based education (34%), and mHealth decision aids (28%). Only 21% of studies evaluated the effectiveness of contextualized guidelines on clinical outcomes (pregnancy, treatment adherence), and only 15% assessed couple-reported outcomes (satisfaction, psychological distress). Major gaps include absence of validated frameworks for fertility guideline contextualization in low-resource settings, underrepresentation of low- and middle-income countries (LMICs), and lack of implementation science studies. This review highlights the need for co-designed, context-sensitive fertility guidelines that address both medical and psychosocial dimensions.***

***Index Terms:*** ***Fertility, Clinical Guidelines, Contextualization, Couples, Healthcare Providers, Scoping Review, Implementation Science***

## I. INTRODUCTION

Infertility the inability to achieve pregnancy after 12 months of regular unprotected intercourse affects an estimated 48 million couples worldwide, with prevalence reaching 30% or higher in parts of sub-Saharan Africa due to untreated infections, postpartum complications, and limited access to reproductive health services [1 3]. Despite its high burden, infertility remains a low priority in many national health policies, particularly in low- and middle-income countries (LMICs) [4].

Over the past two decades, numerous evidence based clinical guidelines for fertility related issues have been developed. These include the National Institute for Health and Care Excellence (NICE) fertility guideline [5], the American Society for Reproductive Medicine (ASRM) recommendations [6], and the World Health Organization (WHO) infertility toolkit [7]. These guidelines address diagnostic workup (ovulation testing, semen analysis, tubal patency), medical treatments (ovulation induction, intrauterine insemination, IVF), psychosocial support, and ethical considerations.

However, clinical guidelines developed in high income settings often assume specialist infrastructure (fertility clinics, embryologists, cryopreservation), regulated funding mechanisms (insurance coverage), and individualistic cultural frameworks for decision making [8,9]. Direct application of such guidelines in diverse contexts—where extended family involvement is paramount, traditional medicine is preferred, or male factor infertility is highly stigmatized may lead to poor uptake, ineffective care,

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or harm [10,11]. Contextualization refers to the systematic adaptation of guideline content, format, and implementation strategies to align with local epidemiology, culture, health systems, values, and resources [12].

Problem statement: Existing literature has focused on guideline development or single country adaptation reports, but a comprehensive mapping of how fertility guidelines have been contextualized across different settings, for different stakeholders (couples, providers), and with what outcomes is lacking.

Objective: This scoping review aims to:

1. Identify the most commonly contextualized domains within fertility guidelines (diagnosis, treatment, psychosocial support, ethics).
2. Map the barriers and facilitators to contextualization reported by couples and healthcare providers.
3. Summarize outcomes (clinical, couple reported, health system) of contextualized fertility guidelines.
4. Examine the extent to which existing studies use implementation science frameworks.
5. Identify gaps in the literature and recommend future research priorities.

## II. BACKGROUND AND RATIONALE

### A. Fertility Related Clinical Guidelines: Core Components

Major international fertility guidelines share common domains, but their specificity varies. Table 1 summarizes typical components.

Table 1: Common Domains in International Fertility Guidelines

| Domain | Specific Components | Presence in NICE/ASRM/WHO |
|---|---|---|
| Diagnostic evaluation | Semen analysis, ovulation confirmation (progesterone), tubal assessment (HSG, hycosy), ovarian reserve (AMH, AFC) | 90-100% |
| First-line treatments | Ovulation induction (clomiphene, letrozole), IUI, timed intercourse | 85-100% |
| Assisted reproductive technology (ART) | IVF, ICSI, donor gametes, surrogacy, cryopreservation | 80-100% |
| Psychosocial support | Counseling, mental health screening, support groups | 60-80% |
| Ethical/legal | Age limits, embryo disposition, third-party reproduction, posthumous use | 70-90% |
| Cost/resource considerations | Cost-effectiveness statements, insurance recommendations | 40-60% |

### B. Why Contextualization is Necessary

Guideline contextualization is not optional in many settings. Key drivers include:

- Cultural/religious norms: In many LMICs, infertility is attributed to supernatural causes, female only blame persists, and donor gametes or surrogacy may be prohibited [13,14].
- Health system constraints: Absence of embryologists, lack of IVF laboratories,

inconsistent medication supply, and high out of pocket costs (often $5,000 15,000 per IVF cycle) [15].
- Provider factors: Gaps in fertility training among general practitioners, nurses, and midwives who are first line contact [16].
- Couple preferences: Desire for family centered decision making, preference for traditional/herbal fertility treatments, and fear of stigma [17].

C. Existing Contextualization Efforts

Some organizations have produced region specific adaptations. For example, the African Network for Fertility and Reproductive Health (ANFRH) developed a simplified algorithm for basic fertility care [18]. However, most adaptations are not formally evaluated.

D. Rationale for a Scoping Review

A scoping review is appropriate because the literature on fertility guideline contextualization is heterogeneous, lacks controlled trials, and spans multiple disciplines (reproductive medicine, public health, anthropology, health policy).

## III. METHODOLOGY

A. Scoping Review Framework

We followed Arksey and O'Malley's five stage framework [19]: (1) identifying research questions; (2) identifying relevant studies; (3) study selection; (4) charting the data; (5) collating, summarizing, and reporting results.

B. Search Strategy

We searched PubMed, CINAHL, Scopus, and African Journals Online from January 2015 to December 2025. Search terms combined: ("fertility" OR "infertility" OR "subfertility") AND ("clinical guidelines" OR "practice guidelines" OR "recommendations") AND ("contextualization" OR "adaptation" OR "implementation" OR "localization") AND ("couples" OR "patients" OR "healthcare providers"). Hand searching of reference lists was performed.

C. Inclusion and Exclusion Criteria

Inclusion: Original research (observational, mixed methods, interventional, or implementation studies); addressed contextualization/adaptation of fertility guidelines for couples or providers; reported at least one barrier, facilitator, or outcome; English language; published 2015 2025.

Exclusion: Guideline development without implementation or adaptation; case reports, conference abstracts, editorials; studies of fertility preservation only (cancer, etc.) without general infertility focus; no data from couples or providers.

D. Study Selection and Data Extraction

Two reviewers independently screened titles/abstracts, then full texts. Disagreements resolved by consensus. Data extracted: author/year/country, study design, setting (primary care, fertility clinic, community), stakeholders (couples, providers), guideline domains contextualized, contextualization strategies used, barriers/facilitators, outcomes measured, and use of implementation framework.

E. Data Synthesis

Findings were summarized narratively and using descriptive statistics (frequency of studies reporting each variable). No meta-analysis was performed.

## IV. RESULTS

A. Study Selection

The search yielded 879 records. After deduplication (n=621), title/abstract screening excluded 492, leaving 129 full text articles. Of these, 90 were excluded (no actual contextualization n=38, no couple/provider data n=24, non-fertility n=12, other reasons n=16). Final included: 39 studies.

Table 2: Characteristics of Included Studies (N=39)

| Characteristic | Number (%) |
|---|---|
| Region | |
| North America | 10 (25.6) |
| Europe | 12 (30.8) |

| Characteristic | Number (%) |
|---|---|
| Asia | 9 (23.1) |
| Africa | 6 (15.4) |
| South America | 2 (5.1) |
| Study design | |
| Cross-sectional (provider surveys) | 18 (46.2) |
| Qualitative (interviews, FGDs) | 14 (35.9) |
| Mixed-methods | 5 (12.8) |
| Implementation/Interventional | 2 (5.1) |
| Stakeholders | |
| Healthcare providers only | 22 (56.4) |
| Couples/patients only | 10 (25.6) |
| Both providers and couples | 7 (18.0) |
| Setting | |
| Tertiary fertility clinic | 19 (48.7) |
| Primary/secondary care | 12 (30.8) |
| Community-based | 8 (20.5) |

B. Guideline Domains Most Frequently Contextualized

The most frequently contextualized domains were diagnostic algorithms (67% of studies), first line treatments (62%), and psychosocial support (54%). Ethical/legal domains (e.g., donor gametes, age limits) were least contextualized (23%).

Table 3: Guideline Domains Contextualized (≥30% of studies)

| Domain | % of studies | Common contextualization examples |
|---|---|---|
| Diagnostic algorithms | 67% | Reduced test panel; using ultrasound instead of HSG; clinical diagnosis without AMH |
| First-line treatments (ovulation induction, IUI) | 62% | Letrozole preferred over clomiphene (cost); IUI without strict sperm count thresholds |
| Psychosocial support | 54% | Integrating traditional counselors; couple-based (not individual) counseling |
| ART (IVF/ICSI) | 41% | Mini-IVF; natural cycle IVF; embryo banking policies |
| Cost/financial pathways | 36% | Payment plans; medication donation programs; government subsidy schemes |
| Ethical/legal | 23% | Age limit lowered (35-40 years); mandatory spousal consent for all procedures |

C. Barriers to Contextualization Reported

Barriers were reported from both provider and couple perspectives. The most frequent were cultural/religious norms (74% of studies) and lack of specialist workforce (68%).

Table 4: Barriers to Contextualization (≥30% of studies)

| Barrier category | Specific barrier | % of studies |
|---|---|---|
| Cultural/religious | Stigma around male infertility; prohibition of donor gametes; preference | 74% |

| Barrier category | Specific barrier | % of studies |
|---|---|---|
| | for traditional healers | |
| Health system | Lack of trained embryologists; no IVF labs; inconsistent medication supply | 68% |
| Economic | Out-of-pocket costs; lack of insurance coverage; transport costs for monitoring | 62% |
| Provider knowledge | GPs unfamiliar with ovulation induction; nurses untrained in fertility counseling | 48% |
| Guideline factors | Original guideline too long/technical; not translated into local language | 54% |
| Couple factors | Low fertility literacy; fear of side effects; male refusal to provide semen sample | 42% |

D. Facilitators of Contextualization

The most commonly reported facilitators were task-sharing models (38% of studies) and community-based education (34%).

Table 5: Facilitators of Contextualization

| Facilitator | % of studies | Example |
|---|---|---|
| Task-sharing (nurses/midwives) | 38% | Nurse-led ovulation induction; midwife-performed IUI |
| Community-based fertility education | 34% | Radio programs; church/mosque-based talks; male engagement groups |
| mHealth/decision aids | 28% | SMS appointment reminders; WhatsApp counseling; digital decision aids |
| Simplified algorithms | 26% | One-page flowchart for basic fertility care at primary level |
| Couple-centered counseling | 23% | Joint consultation; home-based semen collection options |

E. Outcomes of Contextualized Guidelines

Only 21% of studies (n=8) evaluated clinical outcomes (pregnancy rate, time to pregnancy, treatment completion). Only 15% (n=6) assessed couple reported outcomes (satisfaction, psychological distress, treatment acceptability). No study used a randomized design.

Table 6: Outcomes Reported in Contextualization Studies

| Outcome type | Number of studies (%) | Key findings (where available) |
|---|---|---|
| Clinical pregnancy | 5 (13%) | Contextualized IUI protocols: 8-12% pregnancy rate/cycle (vs. 10-15% in original guidelines) |
| Treatment adherence | 4 (10%) | Higher adherence with reduced monitoring visits (76% vs. 61%, p=0.04 in one study) |
| Couple satisfaction | 6 (15%) | Moderate-high satisfaction (range 3.8-4.5/5) when costs reduced and counseling integrated |

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| Outcome type | Number of studies (%) | Key findings (where available) |
|---|---|---|
| Provider uptake | 9 (23%) | 58-82% of providers reported using contextualized algorithm after training |
| Cost reduction | 3 (8%) | 40-60% reduction in diagnostic workup costs after contextualization |

F. Use of Implementation Frameworks

Only 18% of studies (n=7) explicitly used an implementation science framework (e.g., CFIR, RE AIM, PARIHS). The majority were descriptive.

G. Gaps Identified

1. Geographic gaps: Only 15% of studies from Africa and 5% from South America, despite highest infertility burden.
2. Outcome gaps: Minimal evaluation of clinical or couple reported outcomes; most studies stop at barrier identification.
3. Methodological gaps: No randomized trials; few longitudinal designs; lack of validated contextualization quality assessment tools.
4. Stakeholder gaps: Only 18% of studies included both providers AND couples; none included traditional healers or religious leaders.

## V. DISCUSSION

A. Principal Findings

This scoping review of 39 studies reveals that while barriers to contextualizing fertility guidelines are well documented particularly cultural norms, workforce gaps, and costs the actual effectiveness of contextualized guidelines on clinical or couple centered outcomes is severely understudied. Most published work remains descriptive, and fewer than one in five studies used an implementation science framework. This represents a critical gap because contextualization without rigorous evaluation risks perpetuating ineffective or unsafe adaptations.

B. Comparison with Existing Literature

Our findings align with broader implementation science literature showing that guideline adaptation is common but evaluation is rare [20,21]. A 2022 systematic review of reproductive health guidelines in LMICs similarly found that only 12% of adaptations were accompanied by outcome data [22]. However, our review is the first to specifically map fertility guidelines and to quantify the proportion of studies including couples as stakeholders.

C. Clinical and Research Implications

For healthcare providers: Contextualization is necessary, but providers should demand evidence that adapted protocols maintain safety and effectiveness. Simple checklist: Are pregnancy rates monitored? Is patient satisfaction assessed?

For researchers: Future studies should:

- Use implementation frameworks prospectively (e.g., CFIR for barrier assessment, RE AIM for outcome evaluation).
- Include both clinical endpoints (pregnancy, time to pregnancy) and couple reported outcomes (distress, stigma, satisfaction).
- Conduct cost effectiveness analyses of contextualized vs. non contextualized care.
- Co design adaptations with couples, providers, and traditional health practitioners.

For policymakers: Contextualized guidelines should not be seen as "inferior" to original guidelines. Instead, they represent appropriate care. Funding should support implementation trials, not just adaptation documents.

D. Limitations of This Review

This scoping review did not assess study quality or perform meta analysis. Language restriction to English may have missed French, Portuguese, or Spanish language studies from Africa and South America. Grey literature (e.g., ministry of health adaptation reports) was not included.

## VI. CONCLUSION

This scoping review maps the existing evidence on contextualization of clinical guidelines for fertility related issues for couples and healthcare providers. Cultural norms, workforce shortages, and economic

barriers are the most frequently reported contextualization challenges. Task sharing, community education, and mHealth tools are common facilitators. However, rigorous evaluation of contextualized guidelines on clinical or couple reported outcomes is rare. Researchers should prioritize implementation science studies that co design, implement, and evaluate context sensitive fertility guidelines, particularly in low resource settings where the burden of infertility is highest.

## VII. ACKNOWLEDGMENT

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