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The Journey of the Infertile Couple: Clinical, Ethical, and Societal Challenges in the Evolving Landscape of Medically Assisted Reproduction

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ADMINISTRATIVE INFORMATION

Support - None.

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Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 July 2025 and was last updated on 21 July 2025.

INTRODUCTION

Review question / Objective What are the clinical, psychological, and ethical challenges faced by couples during the infertility journey—from first consultation to advanced reproductive technologies?

How do current models of infertility care address (or fail to address) the emotional, financial, and relational burdens experienced by patients?

What is the role of emerging tools—such as AI-driven decision support, patient-centered digital platforms, and precision diagnostics—in transforming infertility management?

How can fertility care be reimagined to ensure equity, autonomy, and dignity, especially regarding controversial practices like gamete donation, surrogacy, and cross-border ART?

What principles should guide a more holistic and ethically grounded model of infertility care in the 21st century?

Background Infertility affects an estimated 15% of couples globally, yet its management remains fragmented, emotionally taxing, and often inequitable. While advances in assisted reproductive technologies (ART) have expanded therapeutic possibilities, many couples still face delays in diagnosis, inconsistent care pathways, and limited access to evidence-based or ethically coherent options. Beyond the clinical dimension, infertility is deeply intertwined with psychological distress, social stigma, and complex bioethical debates—ranging from gamete donation to surrogacy and cross-border reproductive care. A holistic understanding of the infertile couple's journey is urgently needed to integrate biomedical innovation with patient-centered care, ethical transparency, and reproductive justice.

Rationale Despite decades of progress in reproductive medicine, the lived experience of infertility remains inadequately addressed in its full clinical, emotional, and ethical complexity. Current care models often focus narrowly on biological interventions while overlooking the psychological burden, inequities in access, and the moral dilemmas posed by advanced technologies. A comprehensive, multidisciplinary lens is needed to reframe infertility not merely as a medical condition but as a deeply human journey—shaped by systems of care, societal values, and evolving reproductive rights. This Perspective seeks to bridge that gap, offering an integrated reflection that can inform future clinical practice, policy, and patient advocacy.

METHODS

Strategy of data synthesis This Perspective employed a narrative synthesis approach, integrating peer-reviewed literature (2010–2025), institutional guidelines (e.g., WHO, ESHRE, ASRM), and real-world clinical observations to explore the multifaceted journey of infertile couples. Sources were selected based on relevance to diagnostic pathways, treatment modalities, psychosocial impacts, ethical dilemmas, and access disparities. Emphasis was placed on comparative and interdisciplinary insights, including reproductive endocrinology, psychology, bioethics, and health policy. Rather than aggregating quantitative data, we thematically grouped evidence to construct a multidimensional model of infertility care, identifying critical gaps and opportunities for more person-centered, equitable, and ethically sound practices.

Eligibility criteria For the narrative synthesis presented in this Perspective, we included peer-reviewed articles, clinical guidelines, and institutional reports published between 2010 and 2025 that addressed any of the following domains: (1) clinical diagnosis and treatment of infertility; (2) psychological and relational aspects of infertility; (3) ethical issues related to ART, gamete donation, surrogacy, or cross-border care; and (4) health systems and policy frameworks affecting access to fertility services. Eligible sources included observational studies, systematic reviews, position papers, and policy statements in English. Exclusion criteria were studies focused solely on laboratory or animal research, those without relevance to patient experience or reproductive ethics, and non-peer-reviewed opinion pieces.

Source of evidence screening and selection Relevant literature was identified through a targeted search of PubMed, Scopus, and Web of Science using combinations of terms including "infertility," "assisted reproduction," "ART," "patient journey," "psychological burden," "reproductive ethics," "access to care," and "cross-border reproductive care." Additional sources were drawn from ESHRE, ASRM, and WHO guidelines. Initial screening was based on titles and abstracts, followed by full-text review to assess relevance to at least one of the predefined thematic domains. Priority was given to high-impact reviews, comparative clinical studies, and authoritative ethical or policy discussions. A final selection of 80+ sources was synthesized to develop a multidimensional narrative of the infertile couple's experience.

Data management All references and extracted content were organized using Zotero reference management software. Articles were tagged by thematic category (e.g., clinical care, psychosocial impact, ethics, access to ART) and annotated for relevance to the overarching narrative framework. Key findings, concepts, and quotations were stored in structured tables within Microsoft Excel to facilitate thematic synthesis and cross-comparison. No quantitative data extraction or meta-analysis was performed, in line with the narrative and conceptual nature of this Perspective. All included sources are cited in-text and listed in the reference section according to journal requirements.

Reporting results / Analysis of the evidence The analysis followed a thematic narrative structure, grouping evidence into four interconnected domains: (1) diagnostic delays and variability in infertility workups; (2) emotional and psychosocial burden of infertility and treatment; (3) ethical controversies surrounding gamete donation, surrogacy, and access disparities; and (4) emerging innovations in fertility care, including digital tools and personalized medicine. Evidence from clinical studies, guidelines, and qualitative research was synthesized to illustrate recurrent challenges and to highlight variations across healthcare systems. The results are presented narratively, supported by select tables and figures that map patient trajectories and ethical inflection points. Where possible, contrasting viewpoints were included to reflect the ongoing debate around autonomy, access, and reproductive justice.

Presentation of the results Results are presented according to a narrative structure aligned with the infertile couple's journey—from initial diagnosis to advanced reproductive interventions and psychosocial aftermath. Each thematic section is supported by illustrative evidence from the literature, highlighting clinical variability, systemic gaps, and ethical tensions. Visual aids, including a conceptual flowchart and a graphical abstract, are used to map the multidimensional experience of infertile couples across care settings and cultural contexts. Emphasis is placed on the intersection of biomedical advances with emotional, relational, and societal dimensions of infertility, offering a comprehensive, patient-centered perspective.

Language restriction English.

Country(ies) involved Italy, Switzerland and United States.

Other relevant information This Perspective is registered in INPLASY, as scoping review No funding was received for this work, and the authors declare no conflicts of interest. The article aims to stimulate multidisciplinary dialogue among clinicians, ethicists, policymakers, and patient advocates by integrating medical evidence with experiential, ethical, and systemic considerations. A complete reference list is provided, and visual materials (graphical abstract and conceptual model) are included to enhance clarity and accessibility for diverse readerships.

Keywords Donor oocyte, IVF, cryopreservation, embryo transfer, thaw-refreeze, live birth rate, systematic review, meta-analysis, PRISMA.

Dissemination plans The findings and conceptual framework presented in this Perspective will be disseminated through publication in a peer-reviewed journal (npj Women's Health, pending editorial approval), as well as via academic conferences and interdisciplinary symposia focused on reproductive medicine, bioethics, and women's health. Visual materials, including the graphical abstract and conceptual flowchart, will be adapted for social media platforms and institutional newsletters to reach a broader audience of clinicians, researchers, and patient advocates. Additionally, the authors plan to present key insights in fertility clinic workshops and postgraduate teaching modules to enhance awareness of the multifactorial nature of infertility care and the lived experiences of affected couples.

Contributions of each author

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