




# A Qualitative Exploration of Emotional Experiences in Patients with Thin Endometrium Undergoing Repeated Cancellations of Frozen-Thawed Embryo Transfer Cycles

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**Objective:** The aim of this study was to investigate the emotional experience of patients with thin endometrium (TE) who have repeatedly cancelled their cycles due to unsuitability for embryo implantation during the endometrial preparation phase of freeze-thaw embryo transfer (FET). The overall aim is to improve management strategies and quality of life for these patients.

**Methods:** A descriptive phenomenological methodology was utilized to conduct in-depth, semi-structured interviews with ten patients diagnosed with TE who had experienced repeated FET cancellations between January and June 2024. The emotional responses elicited were systematically analyzed to identify core themes.

**Results:** Four primary themes emerged: 1) a spectrum of negative emotional responses; 2) deterioration in marital relationships; 3) a pronounced need for professional support, including a) expanded treatment options and b) informational guidance; and 4) diverse coping mechanisms employed by patients.

**Conclusion:** Healthcare providers must recognize and address the complex emotional responses associated with repeated transfer cancellations in patients with TE. Tailored psychological interventions and comprehensive support services may not only foster emotional well-being but also potentially improve clinical outcomes in assisted reproductive technology (ART) settings.

**Keywords:** thin endometrium, frozen-thawed embryo transfer, patient experience, qualitative research, emotional distress

## Introduction

Thin Endometrium (TE) is characterized by suboptimal endometrial thickness, typically defined as less than 7 mm during the proliferative or luteal phases of the menstrual cycle.<sup>1</sup> Endometrial receptivity (ER), a critical determinant of successful implantation, is strongly influenced by both the quality of the embryo and the thickness of the endometrium.<sup>2,3</sup> TE is observed in approximately 2.4% to 8.5% of treatment cycles among women undergoing assisted reproductive technology (ART). TE has been linked to reduced clinical pregnancy rates and increased risk of miscarriage, thus contributing significantly to cycle cancellations and implantation failures in ART.<sup>4</sup>

At present, the main treatment methods for TE are to improve the receptivity and thickness of the endometrium by adjusting the levels of estrogen and progesterone in the body, to improve blood flow to the uterus and ovaries, and to promote the proliferation of uterine glands and blood vessels, etc.<sup>5</sup> Nevertheless, the extant literature confirms that the efficacy of TE is inconclusive and largely influenced by individual fitness differences, thus rendering the management of TE a major clinical challenge.<sup>6</sup> During FET preparation, if the endometrium fails to reach the desired thickness, clinicians may opt to postpone embryo transfer until optimal conditions are achieved. For patients with TE, this delay may occur repeatedly, leading to multiple cycle cancellations. Such repeated postponements can extend the treatment timeline, increase psychological distress, and impose additional financial burdens.

Although extensive research has focused on optimizing treatment protocols for TE,<sup>7,8</sup> relatively little attention has been given to the emotional and psychological experiences of these patients during the frozen-thawed embryo transfer (FET) preparation process. Patients with TE often face profound psychological distress due to the uncertainty surrounding their treatment outcomes, repeated transfer failures, financial pressures, and concerns regarding future family planning. Unaddressed emotional challenges may not only impair the efficacy of infertility treatments but may also negatively impact the patient's overall quality of life.

To address this gap, the current study employs semi-structured, in-depth interviews to examine the emotional experiences of patients with TE whose FET cycles were repeatedly canceled or resulted in implantation failures due to insufficient endometrial thickness. By conducting a thorough analysis of these emotional experiences, this study aims to provide healthcare professionals with critical insights to enhance patient care, optimize psychological support strategies, and ultimately improve the quality of life for individuals affected by TE. The key findings of this investigation are outlined below.

## Methods

### Research Team and Reflexivity

The research team comprised seven women, one of whom held a Master of Science in Nursing, two were Associate Chief Nurses, and three were Supervisor Nurses. The team members were employed in clinical nursing, nurse education, and administration roles within the reproductive unit. They collectively possessed expertise in nursing and assisted reproductive education programs. To guarantee the quality of the study, the research team provided all members with training in qualitative research methods in advance. A trusting relationship was established with the subjects during the study. The purpose of the study was explained, and it was made clear to the subjects that their participation would have no impact on the course of treatment, thus ensuring that patients could discuss matters in a frank manner.

### Design

The study employed purposive sampling, with the reproductive center of a tertiary hospital in Hangzhou serving as the research site. A phenomenological research approach was utilized, incorporating in-depth interviews and observations to gather data. This study adopted the interpretative phenomenological approach, which emphasizes the “situated” nature of human experiences, recognizing that each individual's experiences are influenced by their surrounding environment. Given that the participants had undergone assisted reproductive treatment and were impacted by external factors, this approach was appropriate for uncovering the deeper meanings behind their experiences. This study strictly followed the Declaration of Helsinki and was approved by the Medical Ethics Committee of Sir Run Run Shaw Hospital, Zhejiang University School of Medicine (Approval ID: 2024–0188).

### Participants

The participants in the study were patients from the reproductive center who had experienced repeated cancellations of FET cycles due to thin endometrium (TE) between January 2024 and June 2024. The participants were selected through purposive sampling to ensure that they could provide rich insights into the study's research questions.

### Inclusion Criteria

- a. Patients undergoing hormone replacement therapy (HRT) cycles for FET.
- b. Patients who experienced at least two FET cycle cancellations due to an endometrial thickness (EMT)  $\leq 7$  mm on the day of progesterone administration.
- c. Patients aged between 23 and 35 years at the commencement of assisted reproductive therapy (ART).
- d. Patients with adequate verbal communication skills and the ability to express emotions, who consented to participate in the interviews.

### Exclusion Criteria

- a. Patients with cognitive impairments.

- b. Patients with comorbid conditions potentially affecting pregnancy outcomes, such as reproductive tract infections, endometriosis, or uterine diverticula.
- c. Patients who had used psychiatric medications (eg, anti-anxiety or antidepressant drugs) within six months prior to the study.

## Sample

The sample size was determined according to the principle of data saturation, where no new themes emerged after interviewing 10 participants. Therefore, the final analysis included 10 patients. General demographic characteristics of the study participants are summarized in [Table 1](#).

## Development of the Interview Guide

The interview guide was developed using a descriptive phenomenological approach, following a comprehensive review of relevant literature. Two patients who met the inclusion criteria participated in a pilot interview (these patients were not included in the final analysis). Feedback from two reproductive specialists and one psychologist was obtained to revise and refine the interview questions based on the pilot findings.

The final interview guide included the following key questions:

How did you feel when informed that your endometrium was too thin, making it unsuitable for embryo transfer in this cycle?

How did your spouse react when you shared this information, and what were his emotions?

How has the repeated recommendation to cancel embryo transfers due to thin endometrium impacted your life, family relationships, marital relationship, and work?

What are your expectations for your marriage? Are you satisfied with your spouse's support, and how would you like him to support you further?

How has your sexual relationship been affected by these challenges?

How have you coped with these difficulties? Have you received support from family, friends, doctors, or nurses?

What specific help do you wish to receive from healthcare providers during this process?

## Procedure

### Data Collection and Quality Control

All interviews were conducted by the primary investigator. Prior to each interview, communication was established with participants to confirm the schedule. Interviews were held in a private, comfortable health education room to promote open and honest discussion. Before commencing the interviews, participants were thoroughly informed about the study's purpose and significance, with assurance that their data would be used solely for research. Written informed consent was obtained from all participants.

Interviews lasted 30 to 40 minutes, during which the investigator took comprehensive notes and audio-recorded the sessions. Participants were encouraged to freely express their thoughts and emotions, and the investigator paid close attention to both verbal and non-verbal cues, such as body language and emotional fluctuations. The investigator also posed follow-up questions to clarify responses and ensure thorough data collection. Appropriate responses to participants' remarks helped maintain rapport, allowing for a more in-depth exploration of their experiences.

### Data Analysis Methods

Within 24 hours of each interview, the researcher transcribed the audio recordings and organized the field notes. Each transcript was assigned a unique identifier, and an organized archive was established for systematic data management. Data were analyzed using NVivo 12.0 software, following Colaizzi's seven-step phenomenological analysis method:<sup>9</sup>

- a. Familiarization: Reading and listening to the transcripts and recordings to gain a comprehensive understanding of the data.

**Table 1** Basic Information of 10 Infertility Patients

No.	Age (Years)	Marital Status	Duration of Marriage (Years)	Occupation	Education Level	Residence	Reproductive History	IVF Indications	Number of Transplants	Number of Retrieved Embryos	Endometrial Thickness (mm)	Average Monthly Family Income (10,000 RMB)
1	30	First marriage	7	Employee	Bachelor's	Town	G3P0	Tubal occlusion, intrauterine adhesions	4	6	5.0–6.5	0.9
2	36	First marriage	6	Beautician	Associate Degree	Town	G4P0	Male factor infertility	2	3	4.0–5.2	1
3	38	First marriage	14	Worker	Vocational High	Rural	G0P0	Tubal obstruction and peritoneal adhesions	6	4	4.0–6.1	0.7
4	37	First marriage	9	Teacher	Master's	Town	G1P0	Bilateral tubal occlusion, intrauterine adhesions	2	2	4.0–4.9	2
5	37	First marriage	10	Self-employed	Bachelor's	Town	G4P0	Male spermatogenic disorder	3	3	5.0–6.9	1.5
6	37	Remarried	5	Salesperson	Associate Degree	Town	G1P0	Tubal occlusion, intrauterine adhesions	5	5	4.0–5.4	1.7
7	35	Remarried	6	Self-employed	Bachelor's	Town	G4P1	Endometrial polypoid hyperplasia	2	3	4.3–5.6	1.2
8	34	First marriage	6	Employee	Associate Degree	Town	G1P1	Tubal occlusion, intrauterine adhesions	0	4	3.7–4.9	2
9	34	First marriage	7	Self-employed	High School	Rural	G0P0	Tubal occlusion, intrauterine adhesions	3	4	4.3–5.6	1
10	29	First marriage	4	Freelancer	High School	Rural	G4P1	Tubal occlusion, intrauterine adhesions	3	2	4.3–5.6	1

**Notes:** IVF Indications: Refers to the specific medical reasons for undergoing in vitro fertilization. GxPx: G (gravida) represents the number of pregnancies; P (para) represents the number of births (both live and stillbirths).

- b. Extraction of Significant Statements: Identifying key statements and ideas relevant to the research objectives.
- c. Coding: Assigning codes to frequently occurring concepts or ideas.
- d. Formulating Meaning: Developing detailed descriptions based on the coded data.
- e. Organizing Themes: Grouping related ideas into clusters of meaning.
- f. Theme Abstraction: Abstracting overarching themes from the categorized data.
- g. Synthesis: Integrating themes into a coherent framework that encapsulates the core experiences of participants.

For any incomplete or ambiguous content, participants were contacted for clarification to ensure the data's accuracy and completeness. Following this, the data were reviewed in conjunction with the researcher's reflections and insights, resulting in the development of a structured, interconnected framework illustrating the relationships between the various identified themes.

## Results

### Theme 1: Prevalence of Negative Emotional Responses

Participants exhibited a range of negative emotional responses, primarily including anxiety, self-blame, guilt, helplessness, and disappointment. These emotions were often exacerbated by societal and cultural expectations, particularly within the framework of traditional Chinese family values that emphasize the importance of lineage continuation, further intensifying psychological stress.

#### Anxiety and Depression Reaction

All participants expressed significant anxiety and depression reaction related to the uncertainty of future reproductive outcomes, particularly regarding concerns that their endometrial thickness might continue to be insufficient for embryo transfer in subsequent treatment cycles.

P2: "The doctor told me they've already used high doses of medication to promote endometrial growth, but the outcome is still unsatisfactory. Does this mean there are no other treatment options for me?"

P5: "I've undergone oral medication, intrauterine drug infusions, and PRP treatment. If electro-acupuncture doesn't work, I can't imagine what my next step will be."

P7: "My endometrium has never reached the required thickness. Does this mean the embryo transfer will always be delayed? If so, all the effort with IVF may be futile." (The participant became emotional and began crying.)

#### Self-Blame and Guilt

Participants whose embryo transfers were canceled due to insufficient endometrial thickness often exhibited intense feelings of self-blame and guilt, rooted in past reproductive decisions or medical interventions.

P2: "It's my fault for being reckless when I was younger. After multiple abortions with my ex-boyfriend, I developed uterine adhesions. Despite undergoing five hysteroscopic adhesiolysis surgeries, my endometrium still won't grow. Maybe this is my punishment."

P4: "When I first got married, I prioritized my career. After an unintended pregnancy, I chose to have an abortion and didn't take care of myself post-procedure. Now, I can't transfer embryos because my endometrium is too thin, and I regret my decisions. Otherwise, my child would already be six years old."

P9: "My husband is the only son in three generations, and the family expects me to bear children. I've left work and dedicated four years to IVF, but now, because of my thin endometrium, I can't proceed with the embryo transfer. I feel like I'm a burden to the family." (The participant choked up.)

P9: "Four years ago, I was thrilled to be pregnant, but it turned out to be a molar pregnancy. After multiple curettage procedures, I developed uterine adhesions. Even after several adhesiolysis surgeries, my endometrium still cannot grow normally."

## Complaints and Anger

When repeatedly faced with canceled embryo transfers due to inadequate endometrial preparation, patients often expressed complaints and anger towards perceived causes of their reproductive struggles.

P4: "I'm convinced that the doctor who performed my abortion years ago was too rough and caused permanent damage to my endometrium."

P5: "I didn't know before IVF that my husband's chromosomal issues caused my multiple miscarriages. It's because of him that we had to opt for third-generation IVF, and now my endometrium has become too thin."

P10: "After my daughter was born, I had an unintended pregnancy while still breastfeeding because my husband insisted on intercourse. The doctor said the fetus and placenta had withered and adhered like concrete, making it extremely difficult to clean, and this severely damaged my endometrium." (The participant expressed anger towards her husband).

## Disappointment and Helplessness

Many participants expressed feelings of profound disappointment and helplessness, particularly when their endometrial thickness failed to meet the criteria for embryo transfer, undermining their confidence in future treatment outcomes.

P8: "My mother-in-law passed away three months ago, and I never got the chance to undergo embryo transfer. She passed away with that regret."

P7: "After the second failed embryo transfer, I suggested divorce to my husband. He hesitated, for a moment and then said, 'Let's wait and see,' which made me realize he was also considering it. I felt deeply disappointed."

P4: "Due to my frequent absences from work for treatment, the school principal reassigned my responsibilities to a colleague. It was a huge blow to my confidence, and I cried the entire day." (The participant showed visible distress.)

## Theme 2: Decline in Marital Quality and Strain on Relationships

Infertility, as a significant life stressor, often exacerbated emotional and psychological distress in participants, which in turn strained marital relationships. As treatments extended without success, anxiety, depression, and frustration further intensified, sometimes leading to marital discord or, in extreme cases, domestic violence.<sup>10</sup>

P2: "My husband doesn't know about my past abortions. When he asked the doctor why my endometrium is thin, luckily the doctor didn't tell him. I live in constant fear that he'll find out."

P5: "My husband initially supported the IVF process, but after three failed transfers, he began blaming me. Now, I'm solely responsible for the treatment, and we argue frequently."

Several participants mentioned changes in their husbands' emotions, noting increasing frustration and impatience as treatment failures persisted.

P6: "After four hysteroscopic surgeries, my husband complained that we hadn't been able to have sex for too long. I was exhausted, yet he focused on his dissatisfaction."

P10: "I now avoid sexual intercourse, thinking it might harm my endometrium. My husband complains about me neglecting his needs, and I'm worried he might have an affair."

## Theme 3: Desire for Professional and Legal Support

Given the prolonged and uncertain nature of their treatment, many patients actively sought more detailed professional guidance and expressed a desire for clearer legal and regulatory support, particularly in areas such as surrogacy.

### Desire for Professional Knowledge

Participants frequently sought treatment information from online sources but often found the variety and inconsistency of information overwhelming.

P2: "I read online that multiple hysteroscopies can impair endometrial growth. I've already had five—will my condition worsen?"

P9: "I've heard about combining Traditional Chinese Medicine with IVF treatment. Is that effective?"

P4: "I've read about stem cell therapy online. Am I a suitable candidate for it?"

P8: "Is platelet-rich plasma (PRP) therapy effective in improving endometrial growth? Do you have any research findings related to this?"

P6: "I've had four hysteroscopic adhesiolysis procedures, and the doctor mentioned that if there are still adhesions at the uterine horn, I might need another surgery. Can't this be solved thoroughly in one procedure?"

### Desire for Legal and Regulatory Support

Several participants voiced the need for legal reforms, particularly around surrogacy, to help patients with complex reproductive issues achieve parenthood.

P8: "Four years ago, I had a preterm delivery and massive hemorrhage due to placenta accreta, which led to uterine artery embolization and ligation. After multiple curettage procedures, my endometrium became extremely thin, and my menstrual flow is now very light. Doctors are at a loss regarding my endometrial issues, but we are still determined to have our own child. We sincerely hope that legal surrogacy could be made available in official hospitals."

P3: "I have endometrial tuberculosis and have undergone six embryo transfers with high-quality embryos, but none have been successful. I know that surrogacy is expensive and lacks sufficient legal protection, so I'm hesitant to try it."

P4: "I've consulted doctors and reviewed literature, and with my current endometrial condition, the chances of becoming pregnant and successfully giving birth on my own are very slim. The only way to have my own child would be through surrogacy, but current national policies do not permit it. I hope that medical professionals can advocate on behalf of patients like us to secure our legitimate needs."

P1: "Surrogacy might be my only option. I really don't want to give up on my dream of becoming a mother, but under the current circumstances, I have no choice but to consider alternative paths."

## Theme 4: Coping Strategies

Coping strategies varied among participants, influenced by their individual personalities, cognitive levels, and socio-economic status. Some adopted positive approaches, while others displayed more negative coping mechanisms.

### Positive Coping Strategies

Participants who engaged in positive coping strategies focused on social support, career growth, and avoiding emotionally triggering situations.

P1: "My previous house's windows faced the playground of our residential community. Every day, I would see and hear other people's children playing happily, which filled me with envy, jealousy, and pain. Last year, I decided to sell the house because I didn't want to be tormented by this scene every day."

P3: "At the end of last year, my sister-in-law became pregnant. During the Spring Festival, I chose not to return to my hometown, using the excuse of work duties, to avoid facing questions from relatives about my infertility."

P4: "I often remind myself that if I can't have children, I can focus on my career and save money for surrogacy abroad."

P8: "Colleagues younger than me in my office got married and started having children one after another. Some even have two children already. This was a huge blow to me. Fortunately, my boss and colleagues were very understanding and supportive when I took leave for IVF treatments."

### Negative Coping Strategies

Others exhibited more negative coping mechanisms, expressing resignation and diminished hope for successful outcomes.



P7: “I have already invested a great deal of time, energy, and money in treating my endometrial issues. Regardless of the doctor’s advice moving forward, I have decided to transfer the remaining two embryos, and whether I get pregnant or not, I will leave it to fate!”

P6: “I’ve followed the doctor’s instructions closely and tried several new techniques to promote endometrial growth, but none of them have worked as expected. It seems that I’m destined never to become a mother in this lifetime. Without children, my marriage is also on the verge of collapse.”(her eyes looked vacant).

P9: “I’ve done everything I can. If I still can’t conceive, it’s up to him (my husband) to decide. If he can’t accept a life without children, we will probably end up getting divorced.”

## Discussion

### Informed Decision-Making: Communicating the Impact of Thin Endometrium (TE) on Pregnancy Success Rates

Extensive research has consistently demonstrated that a thin endometrium (TE) significantly reduces the success rates of assisted reproductive technologies (ART), such as in vitro fertilization (IVF). Reduced endometrial thickness is associated with marked declines in clinical pregnancy rates, ongoing pregnancy rates, and live birth rates in both fresh and frozen-thawed embryo transfer cycles.<sup>11,12</sup> The main causes of TE include intrauterine adhesions, endometrial scarring due to repeated uterine surgeries, endometrial tuberculosis, uterine artery embolization, and compromised uterine blood flow.<sup>13</sup> Despite advancements in reproductive medicine, improving endometrial thickness and enhancing endometrial receptivity remain key challenges.<sup>14,15</sup>

To optimize patient care, healthcare professionals must conduct a thorough evaluation of the patient’s medical history prior to initiating ART and clearly communicate the complexities of TE and its potential impact on pregnancy outcomes. Individualized treatment plans based on patient-specific factors should be designed, and informed consent must be obtained after patients fully understand the associated risks, including the possibility of cycle cancellations. This approach enables patients to manage their expectations more realistically and reduces the risk of treatment discontinuation due to unexpected outcomes. Furthermore, transparent communication fosters trust in the patient-provider relationship, enhances patient compliance with treatment protocols, and ultimately contributes to improved psychological and treatment outcomes.

### Addressing Patients’ Mental Health and Strengthening Family and Social Support

The psychological burden on patients with TE is considerable, as they often experience significant emotional distress due to unsuccessful or delayed embryo transfers. This emotional toll is compounded by the high costs, prolonged treatment processes, and the chronic nature of their condition, which can lead to heightened feelings of guilt and a sense of personal failure.<sup>16</sup> Additionally, a lack of understanding or emotional support from partners and family members may exacerbate these negative emotions, leaving patients feeling hopeless and isolated.

It is essential for healthcare professionals to prioritize the mental health of TE patients throughout their treatment. Effective communication is key—clinicians should establish a trusting relationship with their patients, actively inquire about their emotional well-being, and respect their privacy and dignity. In cases where patients exhibit signs of severe emotional distress, referrals to mental health professionals for psychological counseling should be made promptly.<sup>17</sup>

Creating patient support groups can also serve as a valuable resource for patients coping with the psychological challenges of TE. These groups can offer social support, reduce feelings of isolation, and provide a platform for sharing successful treatment experiences. The involvement of partners, especially spouses, is critical. Educating partners on how to provide emotional support and encourage open communication can help mitigate marital strain and promote a stronger emotional bond between couples. Encouraging shared decision-making and fostering a team-based approach to treatment can improve the patient’s coping ability and enhance overall quality of life.<sup>18</sup>



## Providing Updated Treatment Information and Personalized Guidance

TE patients, especially those who have experienced repeated failed embryo transfers, often seek the latest information on treatment options to alleviate their psychological distress and improve their chances of success. Current treatment strategies for TE include pharmacological approaches, physical therapies, surgical interventions, and experimental techniques such as stem cell therapy, all of which show varying degrees of success in enhancing endometrial thickness and receptivity.<sup>19</sup>

It is crucial for healthcare providers to proactively offer up-to-date, evidence-based information about these treatment options. This aligns with the ethical obligation to provide patients with accurate, reliable, and timely information, empowering them to make informed decisions about their care. Regular training for healthcare providers ensures that they remain knowledgeable about the latest advancements in reproductive medicine, enabling them to offer scientifically validated and effective treatment options. Establishing clear communication channels and addressing patients' concerns promptly will help reduce anxiety and enhance their confidence in the treatment process, potentially improving embryo transfer success rates.

## Information Guidance and Multi-Channel Social Support

The findings of this study indicate that as patients seek the latest treatment methods and medication information, they actively explore various assisted reproductive options.<sup>20</sup> This demonstrates their strong desire for motherhood and their proactive attitude in facing treatment challenges. Patients express concerns regarding the legality, ethics, and safety of different treatment methods, particularly since relevant laws and ethical discussions vary across countries and regions. Within a globalized healthcare environment, patients may encounter multiple challenges arising from differing legal and ethical frameworks.<sup>21</sup>

In this diverse medical landscape, the role of healthcare providers extends beyond merely offering the latest medical technologies. They should also assist patients in understanding local legal frameworks and ethical requirements to facilitate informed decision-making in assisted reproduction.<sup>22</sup> Healthcare professionals must ensure that patients are fully aware of the legal regulations, ethical considerations, and potential medical risks associated with their choices, helping them to make the best decisions that align with their needs while providing ongoing support.<sup>23</sup> Furthermore, healthcare providers should guide patients in exploring other safe and legally compliant assisted reproductive pathways, thereby reducing patient anxiety and aiding them in the decision-making process.

Based on patient feedback, healthcare institutions and researchers can continue to advance treatment approaches for issues such as thin endometrium through in-depth research, providing empirical evidence to policymakers.<sup>24,25</sup> Such research can help promote more flexible and inclusive healthcare policies, ensuring that patients can access safe and effective treatment options within the legal framework, ultimately enhancing their quality of life and healthcare experience.

## Limitations

There are some expected limitations. Firstly, the results of qualitative studies are susceptible to the subjective ideas of the researchers, which reduces the credibility and replicability of the results. Secondly, the results of this study were derived from only 10 TE patients, which may have resulted in less comprehensive findings.

## Conclusion

This study highlights the significant emotional and psychological burden faced by patients with thin endometrium (TE) undergoing assisted reproductive treatments. These patients experience a range of negative emotions, including anxiety, disappointment, and helplessness, largely due to treatment failures. Their psychological distress is exacerbated by unmet informational and emotional support needs.

To improve patient outcomes, healthcare providers should prioritize mental health support, offering timely interventions to address psychological distress. Clear, comprehensive information on reproductive treatments should be provided to mitigate anxiety and foster trust in the treatment process. Healthcare providers should also encourage open communication, emotional expression, and positive coping strategies, which are essential for patient well-being.

While this study offers valuable insights into the emotional experiences of TE patients, it is limited by its narrow focus on patient perspectives, excluding the roles of partners and family members. Future research should adopt a broader scope that includes these additional perspectives to better understand the multifactorial nature of reproductive anxiety. This expanded focus will inform the development of more comprehensive intervention strategies aimed at improving quality of life for TE patients.

## Patient Consent

After explaining the purpose and content of the study to the patients, the informed consent of the patients was obtained for this study, and the paper version of the informed consent was signed. All patient information will be anonymized in the study to eliminate the risk of privacy disclosure.

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## Author Contributions

All authors have made substantial contributions to the work, including aspects such as conceptualization, research design, execution, data collection, analysis, and interpretation, or a combination of these areas. They have also been involved in drafting, revising, or critically evaluating the manuscript, approved the final version for submission, and accept responsibility for all facets of the work. A consensus has been reached regarding the selection of the journal for submission.

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## Disclosure

The authors declare that there is no potential conflicts of interest in this work.

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