RESEARCH ARTICLE

Araştırma Makalesi

Yazışma adresi
Correspondence address
Erhan MULUK
Department of
Obstetrics and Gynecology,
Antalya Anatolia Hospital,
Antalya, Türkiye

drerhanmuluk@gmail.com

Geliş Tarihi / *Received* : September 14, 2025
Kabul Tarihi / *Accepted* : March 18, 2026
Yayın Tarihi / *Published* : October 30, 2026

Bu makalede yapılacak atıf
Cite this article as
Muluk E, Yılmaz Muluk S.
Surrogacy and Ectogenesis Acceptance Among Reproductive-age Women: A Descriptive and Analytical Study
Akd Med J 2026;12: 1-8

Erhan MULUK
Department of
Obstetrics and Gynecology,
Antalya Anatolia Hospital,
Antalya, Türkiye

Selkin YILMAZ MULUK
Department of Physical Medicine and Rehabilitation, Ministry of Health Antalya City Hospital,
Antalya, Türkiye

Surrogacy and Ectogenesis Acceptance Among Reproductive-age Women: A Descriptive and Analytical Study

Üreme Çağındaki Kadınlarda Taşıyıcı Annelik ve Ektogenezis Kabulü: Betimsel ve Analitik Bir Çalışma

ABSTRACT

Objective

To assess awareness and acceptance of surrogacy and ectogenesis among Turkish women of reproductive age, and to examine associations with demographic factors.

Material and Methods

This cross-sectional study included 128 women aged 18–50 who attended routine appointments at obstetrics and gynecology outpatient clinics in two urban hospitals. Participants completed a validated, self-administered questionnaire assessing awareness and attitudes toward surrogacy and ectogenesis (artificial womb), using a 5-point Likert scale. Composite attitude indices served as the main outcomes, and associations with sociodemographic variables were analyzed using non-parametric tests.

Results

A total of 128 women (mean age 37.8 years) participated. Awareness of surrogacy was high, while awareness of ectogenesis was lower. The mean Surrogacy Attitude Index score was 2.97, indicating moderately positive views, whereas the Ectogenesis Attitude Index score was 2.25, reflecting more cautious attitudes. Both indices demonstrated acceptable internal consistency. Support was higher when technologies were framed as medical solutions (39.8% for surrogacy, 21.9% for ectogenesis in at-risk cases) but lower for elective use (21.9% for surrogacy, 3.1% for ectogenesis). Higher education was significantly associated with less favorable attitudes toward surrogacy (p=0.003), while no significant associations were found with age, marital status, or ectogenesis attitudes.

Conclusion

Surrogacy is moderately accepted in therapeutic contexts, while ectogenesis is met with greater caution. Education level may influence attitudes. These findings contribute to a deeper understanding of how women perceive new reproductive technologies and can inform the development of culturally sensitive policies. This study highlights the need for targeted public education and ethical discussion.

Key Words

Surrogacy, Ectogenesis, Artificial womb, Reproductive techniques, Attitude

DOI: 10.53394/akd.1783102

Akdeniz Medical Journal is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

ÖZ

Amaç

Üreme çağındaki Türk kadınları arasında taşıyıcı annelik ve dış gebelik konusundaki farkındalık ve kabullenmeyi değerlendirmek ve demografik faktörlerle ilişkilerini incelemek.

Gereç ve Yöntemler

Bu kesitsel çalışmaya, iki şehir hastanesinin kadın doğum polikliniklerine rutin randevularına gelen 18-50 yaş arası 128 kadın dahil edildi. Katılımcılar, taşıyıcı annelik ve ektogenez (yapay rahim) konusundaki farkındalık ve tutumları 5 puanlık Likert ölçeği kullanılarak değerlendirilen, geçerliliği kanıtlanmış, kendi kendilerine uygulanan bir anketi doldurdular. Bileşik tutum indeksleri ana çıktıları oluşturdu ve sosyodemografik değişkenlerle ilişkiler parametrik olmayan testler kullanılarak analiz edildi.

Bulgular

Toplam 128 kadın (ortalama yaş 37.8) katıldı. Taşıyıcı anneliğe ilişkin farkındalık yüksekken, ektogenez farkındalığı daha düşüktü. Taşıyıcı Annelik Tutum Endeksi (SAI) puanı ortalama 2.97 olup orta derecede olumlu görüşleri gösterirken, Ektogenez Tutum Endeksi (EAI) puanı ise daha temkinli tutumları yansıtan 2.25 idi. Her iki endeks de kabul edilebilir iç tutarlılık gösterdi. Teknolojiler tıbbi çözümler olarak çerçevelendiğinde destek daha yüksekti (taşıyıcı annelik için %39.8, risk altındaki vakalarda ektogenez için %21.9) ancak elektif kullanım için daha düşüktü (taşıyıcı annelik için %21.9, ektogenez için %3.1). Yüksek eğitim, taşıyıcı anneliğe yönelik daha az olumlu tutumlarla önemli ölçüde ilişkiliydi (p=0,003); ancak yaş, medeni durum veya ektogenez tutumlarıyla önemli bir ilişki bulunamamıştır.

Sonuç

Taşıyıcı annelik terapötik bağlamlarda orta düzeyde kabul görürken, ektogenez daha fazla temkinle karşılanmaktadır. Eğitim düzeyi tutumları etkileyebilir. Bu bulgular, kadınların yeni üreme teknolojilerini nasıl algıladıklarının daha iyi anlaşılmasına katkıda bulunur ve kültürel açıdan hassas politika geliştirme süreçlerine ışık tutabilir. Bu çalışma, hedefli halk eğitimi ve etik tartışmaların gerekliliğini vurgulamaktadır.

Anahtar Kelimeler

Taşıyıcı annelik, Ektogenez, Yapay rahim, Üreme teknikleri, Tutum

INTRODUCTION

Surrogacy is a reproductive method in which an embryo is implanted into another woman's uterus. In gestational surrogacy, the surrogate has no genetic link to the baby. Modern practices began in the US in the 1970s and advanced following the first successful in vitro fertilization (IVF) based gestational surrogacy in 1985 (1). Since then, usage has grown significantly; in the US, reported cases rose from 727 in 1999 to 3,432 in 2013, comprising about 2.5% of all assistive reproductive technology (ART) cycles (2). Surrogacy provides a path to parenthood for women with uterine issues and those facing medical risks. Although outcomes are generally positive, surrogacy raises ethical, legal, and psychological concerns (2).

Ectogenesis (artificial womb) is a technology that enables fetal development outside the mother's uterus via lab settings or artificial wombs (AWs) to improve outcomes for premature infants, support women with high-risk pregnancies, and offer options to infertile individuals. AWs mimic uterine and placental functions using extracorporeal membrane oxygenation, a circuit to circulate blood, and dialysis for waste removal, with the fetus developing in a polyethylene biobag. While promising for those with placental insufficiency or post-hysterectomy, the technology remains experimental and has only been tested in animal models. Despite medical promise, ethical challenges remain a key barrier to clinical use (3, 4).

Attitudes toward these emerging reproductive technologies vary across populations. For instance, a large-scale study in Ireland-where 85% of participants had undergone ART and 72% had received IVF revealed high acceptance rates: 92% supported gestational surrogacy, 89.6% endorsed the inclusion of international surrogacy in national legislation, and 63.4% opposed the requirement that at least one intended parent be genetically related to the child, favoring the inclusion of donated embryos in legal frameworks (5). In contrast, a study on infertile Turkish women revealed more limited approval: only 15.1% would consider using a gestational surrogate, 14.9% lacked sufficient knowledge about surrogacy, and just 5.3% said they would consider becoming a surrogate. Among those, 12% were willing to do so for a relative, and women with multiple failed IVF attempts were significantly more open to the idea ($P<0.05$) (6).

Building on this background, the present study seeks to assess women of reproductive age in terms of their awareness, perspectives, and acceptance of both surrogacy and ectogenesis. By examining how age, education, health status, and cultural context influence perceptions of these methods, the study will offer insights relevant to medical decision-making and public policy development.

The primary hypothesis of this study proposes that younger women will have significantly more positive attitudes toward surrogacy and ectogenesis compared to older women. The secondary hypotheses of this study propose

that women who have a health condition that may prevent them from experiencing pregnancy, who report a physical disability, and who have a higher level of education, are more likely to hold positive attitudes toward surrogacy and ectogenesis compared to women without such conditions or with lower educational attainment. Additionally, it is hypothesized that the overall acceptance rate of surrogacy and ectogenesis among women of reproductive age is low, estimated to be below 30%.

MATERIALS and METHODS

Study Design, Setting, and Participants

This analytic cross-sectional study was conducted between February 2025 and April 2025 in the outpatient clinics of two regional hospitals. The target population of this study consisted of healthy Turkish women of reproductive age (18-50 years) who attended obstetrics and gynecology clinics for routine check-ups and who voluntarily agreed to participate. Inclusion criteria were being within the reproductive age range, cognitively capable of completing a questionnaire, and voluntarily agreeing to participate. Exclusion criteria included having severe psychiatric or cognitive disorders, previous use of ARTs, being unable to comprehend the survey content, or having a serious medical condition such as advanced-stage cancer or severe cardiopulmonary disease. The study received approval from the regional institutional ethics committee, and all participants provided written informed consent. This study was conducted and reported in accordance with the STROBE guidelines.

Selection bias was minimized through strict eligibility criteria. A self-administered, anonymous survey reduced interviewer and social desirability bias. Measurement bias was addressed using a validated questionnaire with acceptable internal consistency (Cronbach's $\alpha>0.70$) (7). Non-parametric tests were used due to non-normal distributions, enhancing the validity of analyses.

Variables, Data Sources, and Measurement

Data were collected using a structured questionnaire adapted from a validated study by Simonstein et al (7). The questionnaire included sections on: sociodemographic information (age, marital status, education, number of children), awareness and prior knowledge of surrogacy and AWs, attitudes toward the ethical, social, and clinical implications of these technologies, acceptance and willingness to consider using these methods under specific conditions.

Responses were recorded using a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree.' The survey was self-administered by participants and took approximately 10-15 minutes to complete. Attitude scores were calculated by averaging responses to all items after reverse-coding negative statements. Scores ranged from 1 (very negative) to 5 (very positive). Cronbach's alpha indicated acceptable internal consistency.

Study Size Determination

The required sample size was determined using G*Power 3.1. For group comparisons between younger and older women, an a priori analysis using a two-tailed independent samples t-test (effect size $d = 0.50$, $\alpha = 0.05$, power = 0.80, 1:1 allocation) indicated a required sample size of 128 participants. Additionally, a separate calculation for Spearman correlation between age (as a continuous variable) and attitude scores (effect size $\rho = 0.30$, $\alpha = 0.05$, power = 0.80) yielded a lower required sample size of 84. To accommodate both analyses and ensure adequate statistical power, the higher requirement of 128 participants was adopted.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics (version 29.0.2.0). Descriptive statistics (means, SDs, frequencies, and percentages) summarized sociodemographic data and attitude scores. Normality of continuous variables (e.g., age, attitude indices) was assessed using Shapiro–Wilk and Kolmogorov–Smirnov tests, as well as histograms; all indicated non-normal distribution ($P<0.05$). Accordingly, non-parametric tests were used.

Composite indices were created for attitudes toward surrogacy (Surrogacy Attitude Index, SAI) and ectogenesis (Ectogenesis Attitude Index, EAI). SAI included three Likert-scale items (unnaturalness, medical indication, and elective use); EAI comprised four items (naturalness, neonatal use, medical, and elective indications). Scores were averaged, with higher values reflecting more positive attitudes. Internal consistency was acceptable (Cronbach's $\alpha=0.757$ for SAI; $\alpha=0.720$ for EAI).

Participants were categorized into two age groups (<38 and ≥38, based on the median). The Mann–Whitney U test compared SAI and EAI scores between age groups. Spearman's correlation assessed relationships between age, education level, and attitude scores. Kruskal–Wallis H tests evaluated differences by marital status. A two-tailed significance level of $P<0.05$ was adopted throughout the analysis. Effect sizes were reported as Spearman's ρ for correlations and as eta-squared ($\eta^2 = H/[N-1]$) for Kruskal–Wallis tests.

RESULTS

A total of 128 participants were included in the study, with a mean age of 37.84 years. The sample primarily consisted of individuals with at least a high school education, and more than half were married. The average number of children was over one. Nearly all participants had heard of surrogacy, while awareness of ectogenesis was more limited. The mean SAI score was 2.97 (SD=0.93), suggesting a moderately positive view overall. In contrast, the mean EAI score was lower at 2.25 (SD=0.70), indicating more reserved or uncertain attitudes toward AW technology (Table I).

Table I. Descriptive statistics

Variable	Mean±SD/ n (%)	Minimum, Maximum
Age	37.84±9.05	18, 50
Education level		
basic education	25 (19.6 %)	-
high school	73 (57.0 %)	-
university	30 (23.4 %)	-
Marital status		
single	41 (32.0 %)	-
married	68 (53.1 %)	-
Divorced/widowed	19 (14.8 %)	-
Number of child	1.16 ± 1.09	0, 4
Health condition preventing pregnancy		
yes	8 (6.3 %)	-
no	120 (93.8 %)	-
Heard about surrogacy before		
yes	120 (93.8 %)	
no	8 (6.3 %)	
Heard about ectogenesis before		
yes	59 (46.1 %)	
no	69 (53.9 %)	
Surrogacy attitude index	2.97 ± 0.93	1.00, 5.00
Ectogenesis attitude index	2.25 ± 0.70	1.00, 4.25

The internal consistency of the composite indices was acceptable, with Cronbach's α = .757 for the Surrogacy Attitude Index (three items) and α = .720 for the Ectogenesis Attitude Index (four items), as shown in Table II. These values indicate satisfactory reliability for group-level comparisons.

Table II. Internal consistency of attitude indexes

Surrogacy Attitude Index	
Cronbach's Alpha	N of Items
0.757	3
Ectogenesis Attitude Index	
Cronbach's Alpha	N of Items
0.720	4

Responses to statements about surrogacy and ectogenesis were mostly concentrated around the "disagree," "neutral," and "agree" categories, with fewer participants choosing the extreme ends of the scale. Surrogacy received greater support when framed as a medical necessity rather than a personal choice, and personal willingness to use either surrogacy or AWs remained limited. For ectogenesis, more participants agreed that it goes against human nature, though the idea of developing AWs to support premature infants was viewed more positively than elective use. When combining the percentages of those who selected "agree" or "strongly agree," 39.8% supported surrogacy for medical reasons, while only 21.9% supported elective use. Similarly, 21.9% supported ectogenesis if the baby were at risk, 10.2% for women unable to carry a pregnancy, and just 3.1% supported its elective use (Table III).

There was no statistically significant difference in SAI scores between the two age groups (the older group (n=65)

Table III. Participants' responses to statements on surrogacy and ectogenesis.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Surrogacy is against human nature.	7 (5.5%)	45 (35.2%)	43 (33.6%)	20 (15.6%)	13 (10.2%)
Surrogacy should be allowed for women unable to carry a pregnancy due to health issues	8 (6.3%)	21 (16.4%)	48 (37.5%)	30 (23.4%)	21 (16.4%)
Surrogacy should be allowed by choice, even without health issues.	29 (22.7%)	41 (32.0%)	30 (23.4%)	18 (14.1%)	10 (7.8%)
I could personally prefer surrogacy to avoid pregnancy.	54 (42.2%)	40 (31.3%)	27 (21.1%)	4 (3.1%)	3 (2.3%)
I would consider surrogacy if I couldn't have a child naturally.	11 (8.6%)	40 (31.3%)	51 (39.8%)	14 (10.9%)	12 (9.4%)
Artificial womb is against human nature.	1 (8.0%)	5 (3.9 %)	32 (25%)	43 (33.6%)	47 (36.7%)
Artificial womb technology should be developed to improve outcomes for premature babies.	9 (7.0%)	25 (19.5%)	66 (51.6%)	23 (18.0%)	5 (3.9%)
Women unable to carry a pregnancy due to health issues should be allowed to use artificial wombs.	35 (27.3%)	46 (35.9%)	34 (26.6%)	6 (4.7%)	7 (5.5%)
Women should be allowed to use artificial wombs by choice, even without health issues.	53 (41.4%)	48 (37.5%)	23 (18.0%)	3 (2.3%)	1 (0.8%)
I could personally prefer an artificial womb to avoid pregnancy.	51 (39.8%)	57 (44.5%)	19 (14.8%)	2 (1.6%)	0 (0%)
I would consider an artificial womb if my baby were at risk.	11 (8.6%)	35 (27.3%)	25 (19.5%)	38 (29.7%)	19 (14.8%)

and the younger group (n=63)), with a Mann–Whitney U value of 1657 and a p-value of 0.062. Similarly, no significant difference was found in EAI scores between age groups (U=1975, p=0.730), indicating that age group did not influence attitudes toward ectogenesis.

When age was treated as a continuous variable, Spearman's rank-order correlation showed no significant association with attitudes toward surrogacy (p=0.071) or ectogenesis (p=0.109). However, higher education was significantly associated with less favorable attitudes toward surrogacy (p=0.003), while no such relationship was found for ectogenesis (p=0.213). A Kruskal–Wallis H test revealed no significant differences in surrogacy (p=0.438) or ectogenesis (p=0.103) attitude scores across marital status groups (Table IV).

Participants were also asked whether they had any health conditions or physical disability that might prevent pregnancy or lead to a medically complicated pregnancy. Seven individuals responded affirmatively. Among them, one reported a cerebral arteriovenous malformation, one had a uterine anomaly, one had multiple sclerosis, two had sacroiliitis, and two reported scoliosis. The mean SAI score for these participants was 2.94 ± 0.53, and the mean EAI score was 2.79 ± 0.61. However, due to the small number of participants in this subgroup, no comparative statistical analysis was performed.

Table IV. Correlation and group differences in attitude scores

Variable/Group comparison	Test type	Test statistic	p value	95% CI (lower-upper)	Effect size (rho/η^2)[a]
Age–Surrogacy Attitude Index	Spearman's	–0.160	0.071	–0.329 to 0.019	–0.160
Age–Ectogenesis Attitude Index	Spearman's	–0.142	0.109	–0.313 to 0.037	–0.142
Education–Surrogacy Attitude Index	Spearman's	–0.260	0.003*	–0.419 to –0.086	–0.260
Education–Ectogenesis Attitude Index	Spearman's	–0.111	0.213	–0.284 to 0.069	–0.111
Marital status–Surrogacy Attitude Index	Kruskal-Wallis	1.649	0.438	–	0.010
Marital status–Ectogenesis Attitude Index	Kruskal-Wallis	4.554	0.103	–	0.036

DISCUSSION

Surrogacy and ectogenesis are emerging reproductive technologies designed to overcome obstacles to traditional pregnancy, especially for individuals facing infertility or high-risk medical conditions. Ectogenesis, still experimental, refers to gestation in an artificial environment outside the human body.

In this study, awareness of surrogacy among 128 reproductive-age women was high, while awareness of ectogenesis was lower. The attitudes toward surrogacy were generally moderate, with greater support when medically indicated than for elective use. Attitudes toward AWs were more cautious. Support was notably higher for medical applications than for elective use.

The primary hypothesis that younger age would be associated with more positive attitudes was not supported. Higher education was unexpectedly associated with less favorable attitudes toward surrogacy, contrary to the secondary hypothesis (p=0.003). No similar association was found for ectogenesis. Due to the small number of participants with medical conditions and physical impairments that might risk pregnancy, further subgroup analysis was not feasible.

The other hypothesis proposed that overall acceptance of surrogacy and ectogenesis would be below 30% was confirmed for ectogenesis (21.9%), but not for surrogacy, which received 39.8% support for medical use. These findings suggest greater public willingness to accept surrogacy in therapeutic contexts; however, this should be interpreted as an attitudinal preference rather than a formal ethical judgment.

In our study, 20.3% of women said they would consider surrogacy if they could not have a child naturally. This is slightly higher than the 15.1% reported in a 2008 study of Turkish infertile women (6). The increase may reflect evolving public attitudes over time, greater exposure to reproductive technologies, or shifting social norms. Notably, the higher willingness observed in our sample, despite participants not being infertile, could also suggest growing general acceptance or awareness of surrogacy in recent years.

In Simonstein and Mashiach–Eizenberg's study, public opinion in Israel leaned favorably toward AWs, with only 10.2% opposing their development and a strong majority supporting medical applications, particularly for premature infants (65%), women without a uterus (74.5%), or to save an endangered fetus (71.3%). However, support declined sharply for elective use; 87% said they would not use an AW simply to avoid pregnancy (7). This distinction between medical necessity and elective preference mirrors our findings, where support for ectogenesis and surrogacy was notably higher in medical contexts, but dropped to 21.9% and 3.1%, respectively, for elective use.

A study of Iranian infertile couples found that higher education correlated with more cautious views on surrogacy, a trend consistent with our findings that more educated participants expressed less favorable attitudes toward surrogacy (8). Another study conducted in Taiwan found strong resistance to surrogacy legalization, with 82.1% of participants-mostly women-opposing it. Notably, those who were more knowledgeable about the issue and more aware of its potential societal impacts were also more likely to oppose surrogacy (9).

In contrast, a Dutch study showed broader societal acceptance, with higher support among women, younger individuals, those with higher education, non-heterosexual people, and the less religious (10). Similarly, public views were found to be generally more favorable, particularly when surrogacy is framed as a solution to infertility in a study from the UK (11). These contrasting findings highlight how cultural context and demographic factors can shape public acceptance differently. Adding further nuance, a large cross-cultural study involving 1177 people from 11

countries found that attitudes toward surrogacy significantly vary by religion and nationality. Muslims and Christians showed more negative attitudes compared to Hindus. Religion explained a small portion of the variance, while nationality was the strongest predictor (12).
In a Canadian study, while most participants had limited knowledge of AW technology, they generally supported the development of this technology, especially for its medical potential (13).
Similarly, another study examining artificial reproductive organs-including artificial ovaries, uteruses, and gametes-found that public support is significantly stronger when these technologies are used to address medical infertility (e.g., from cancer or congenital disorders), rather than for elective reasons such as avoiding pregnancy or delaying childbirth. Nonetheless, awareness of these technologies remains low, particularly for more experimental concepts like ectogenesis (14). Taken together, these studies underscore a recurring theme: public attitudes vary widely across cultures, religions, and nations.
Although both technologies expand reproductive possibilities, they also raise substantial ethical challenges. Surrogacy is becoming increasingly common; however, it continues to raise a number of ethical concerns. These concerns include possible exploitation, debates over autonomy and payment, uncertain medical risks, the use of multiple embryos, legal challenges, questions about the rights of surrogates, custody conflicts, and objections based on social or religious values (2, 15).

Ectogenesis, proposed as an alternative to both surrogacy and uterine transplantation, may become technically feasible within the next decade. This could benefit women without a uterus, those with high-risk pregnancies, and extremely preterm infants (9). However, it also presents serious ethical challenges, including debates over the moral status of embryos, limitations on research, concerns about dehumanization, social inequality, non-medical/ elective use, and possible impacts on maternal-infant bonding and societal norms (3, 4, 16).

While this study offers valuable insights, particularly regarding Turkish women, a population often underrepresented in reproductive ethics literature, certain contextual factors should be considered when interpreting the findings. The sample was drawn from an urban hospital using which may not reflect broader national or regional trends. Additionally, cultural and religious factors, which likely influenced attitudes, were not directly measured. Further limitations include the cross-sectional design, which restricts causal interpretation, and the reliance on self-reported data, which may be influenced by social desirability bias-especially given the sensitive nature of reproductive ethics. Participants' low familiarity with ectogenesis, even after brief explanatory text, may also have limited their ability to form fully informed opinions. Moreover, restricting the sample to women only limits the generalizability of findings to men.
Despite these limitations, the study has several strengths. It employed validated instruments with acceptable internal consistency, ensured careful administration to promote participant comprehension, and appropriately handled missing data to preserve data quality.
Future research should involve more diverse and representative samples, including men, individuals from rural areas, and those with direct experience using or considering ARTs. Larger, multicenter studies across different demographic and cultural contexts would allow for more nuanced subgroup analyses and improve the external validity of findings.

CONCLUSION

This study highlights that while surrogacy is relatively well-known and moderately accepted among women of reproductive age in Turkey, ectogenesis remains a lesser-known and less accepted concept. Education level may be associated with more skeptical views toward surrogacy. These findings underscore the importance of increasing public awareness and education around emerging reproductive technologies. Further research in larger and more diverse samples is needed to inform health policy, patient education, and clinical application of these technologies in culturally sensitive ways.

Ethics commitee approval
This research complies with all the relevant national regulations, institutional policies and is in accordance with the tenets of the Helsinki Declaration, and has been approved by the Ministry of Health Antalya City Hospital Ethical Committee (approval number: 30.01.2025/ 1/4).

Informed consent
All the participants' rights were protected and written informed consents were obtained before the procedures according to the Helsinki Declaration.

Author Contributions
Concept – E.M.; Design – E.M..; Supervision – S.Y.M.; Resources – E.M.; Materials – E.M., S.Y.M.; Data Collection and/or Processing – E.M., S.Y.M..; Analysis and/ or Interpretation – E.M..; Literature Search – E.M.; Writing Manuscript – E.M.; Critical Review – E.M., S.Y.M.

Conflicts of interest
The authors have no conflict of interest to declare.

Financial Disclosure
The authors declared that this study has received no financial support.

Declaration of AI and AI-Assisted Technologies in the Writing Process
The authors used generative AI solely to improve the language and readability of the manuscript. The final content was reviewed and approved by the authors, who take full responsibility.

REFERENCES

1. Klock SC, Lindheim SR. Gestational surrogacy: medical, psychosocial, and legal considerations. Fertil Steril. 2020;113(5):889–91.

2. Söderström-Anttila V, Wennerholm UB, Loft A, Pinborg A, Aittomäki K, Romundstad LB, Bergh C. Surrogacy: outcomes for surrogate mothers, children and the resulting families-a systematic review. Hum Reprod Update. 2016;22(2):260–76.

3. Khulbe Y, Gupta S, Javed B, Neyazi A, Padhi BK. Artificial womb: opportunities and challenges for public health. Int J Surg. 2023;109(3):618–9.

4. Bulletti C, Palagiano A, Pace C, Cerni A, Borini A, de Ziegler D. The artificial womb. Ann N Y Acad Sci. 2011;1221:124–8.

5. O'Brien S, Schaler L, Giblin A, Glover LE, Wingfield M. Assisted human reproduction legislation: Listening to the voice of patients. Eur J Obstet Gynecol Reprod Biol. 2023;284:169–74.

6. Baykal B, Korkmaz C, Ceyhan ST, Goktolga U, Baser I. Opinions of infertile Turkish women on gamete donation and gestational surrogacy. Fertil Steril. 2008;89(4):817–22.

7. Simonstein F, Mashiach-Eizenberg M. The artificial womb: a pilot study considering people's views on the artificial womb and ectogenesis in Israel. Camb Q Healthc Ethics. 2009;18(1):87–94.

8. Esmaeilivand M, Haseli A, Karampour A, Khatony A, Rezaeian S, Naghibzadeh A, Mohammadi MM. A psychological analysis of Iranian infertile couples' attitudes toward gestational surrogacy: a cross-sectional study. Health Sci Rep. 2025;8(2):e70450.

9. Cheng W, Liu SH, Chen CY, Chao KY. Legalization of surrogacy? Opinions from more than 7700 residents in Taiwan. J Public Health Policy. Published online 2025.

10. Agterberg S, van Rijn-van Gelderen L, van Rooij F, de Vos M, Jaspers E, Fukkink R, Mochtar M, Goddijn M, Bos H. Demographic and arrangement-based predictors of Dutch people's attitudes towards surrogacy in various family constitutions. J Reprod Infant Psychol. Published online 2025.

11. Baron T, Svingen E, Leyva R. Surrogacy and adoption: an empirical investigation of public moral attitudes. J Bioeth Inq. 2024;21(4):671–81.

12. Yıldız M, Felix EO, Ademiju O, Noibi TO, Gomes RF, Tanimowo A, Tayyeb M, Khadka RB, Rhino A, Yildiz R, Ramazanzadegan K, Yildirim MS, Solmaz E, Haylı ÇM, Şengan A. Attitudes of different religions toward surrogacy: analysis of 11 countries' situation using machine learning approach and artificial neural networks. J Relig Health. 2023;62(5):3230–51.

13. Hukku S, Wynn LL, Foster AM. "I don't really agree with that:" Canadians' perspectives on the 14-day rule in relation to artificial womb technology. Perspect Sex Reprod Health. 2025;57(1):104–13.

14. Simopoulou M, Sfakianoudis K, Tsioulou P, Rapani A, Giannelou P, Kiriakopoulos N, Pantou A, Vlahos N, Anifandis G, Bolaris S, Pantos K, Koutsilieris M. What will the future hold for artificial organs in the service of assisted reproduction: prospects and considerations. Front Med. 2019;13(6):627-38.

15. Phillips AM, Magann EF, Whittington JR, Whitcombe DD, Sandlin AT. Surrogacy and pregnancy. Obstet Gynecol Surv. 2019;74(9):539–45.

16. Bulletti FM, Sciorio R, Palagiano A, Bulletti C. The artificial uterus: on the way to ectogenesis. Zygote. 2023;31(5):457–67.