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Research Article

Ethical Abortion among Pregnant Women Attending Abortion Decision-making Committee in Erbil Maternity Teaching Hospital

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ABSTRACT

In the Kurdistan Region of Iraq, abortion is legally permitted only to save a woman's life, requiring approval from a medical committee and spousal consent. This restrictive framework raises public health concerns by pushing women toward unsafe alternatives. The aim of this study is to characterize women applying for legal abortion in Erbil, identify determinants of committee decisions, and document pregnancy outcomes. A descriptive cross-sectional study was conducted on 200 pregnant women who applied to the Ethical Abortion Committee at Erbil Maternity Teaching Hospital (September 2024–August 2025). Data from interviews and records were analyzed using descriptive statistics and Chi-square tests. The results show the committee approved 121 (60.5%) of 200 requests. Decisions were significantly influenced by the indication for termination ($P < 0.001$). Requests for severe fetal anomalies were frequently approved, whereas requests citing maternal health conditions – the sole legal ground for abortion had a low approval rate (36.6%). Consequently, 116 pregnancies (58.0%) were terminated. Second-trimester requests were significantly more likely to be approved and terminated than first-trimester requests ($P < 0.001$), reflecting a system driven by the timing of anomaly detection. Under the KRG's restrictive law, the committee pragmatically expanded its remit to approve terminations for lethal fetal anomalies while being overly cautious in applying the explicit maternal life exception. With nearly 40% of applicants refused care, the findings highlight an urgent need for policy reform, including clearer clinical guidelines for maternal health indications. This study contributes empirical evidence to global debates on the application of abortion law, ethics, and practice in restrictive settings.

Keywords: Induced abortion, ethical abortion committee, abortion law, maternal health, fetal anomalies, Kurdistan region, reproductive rights, unsafe abortion

INTRODUCTION

Induced abortion is a common and essential healthcare procedure performed globally. Each year, approximately 73 million induced abortions take place worldwide, accounting for the termination of three out of every ten pregnancies and six out of every ten unintended pregnancies.[1] A critical distinction exists between safe and unsafe abortion, a dichotomy that carries profound public health consequences. The WHO defines a safe abortion as one carried out using a recommended method appropriate for the gestational age and performed by an individual with the necessary skills. Conversely, when individuals face barriers to such care, they often resort to unsafe methods. Globally, nearly half of all abortions (45%) are classified as unsafe, with a disproportionate burden falling on developing regions in Asia, Africa, and Latin America.[1,3] This practice is a major contributor to preventable maternal mortality and morbidity.

A substantial body of evidence demonstrates that legal restrictions do not reduce the incidence of abortion; rather, they directly diminish its safety.[1] In countries with the most prohibitive laws, only one in four abortions is performed safely, a stark contrast to the nearly nine in ten that are safe in countries where the procedure is broadly legal.[4] Islamic jurisprudence allows abortion to save the mother's life,[5] and this principle underlies abortion laws across the Middle East and North Africa (MENA). However, modern laws in many countries reflect restrictive colonial penal codes rather than classical Islamic thought.[4,6,7]

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In federal Iraq, abortion is governed by the Penal Code of 1969, which criminalizes the procedure. Article 417 punishes women who procure an abortion and those assisting them, with harsher penalties for medical professionals or if the woman dies. No exception exists for pregnancies resulting from rape or incest.[8-10] This legal framework forms the grim baseline for all abortion-related conduct in the country. While in the Kurdistan Region of Iraq (KRG), a major legal change occurred in 2020 with the passage of the Patient's Rights and Responsibilities Law. Abortion is permitted only when the woman's life is threatened by a serious health condition and requires her consent, her husband's consent, and approval by a committee of at least five physicians. The law reinforces its stringent limitations by stating unequivocally, "Other than this case, abortion is categorically prohibited."[11,12] This unique legal development in the KRG creates a distinct institutional context for abortion decision-making, justifying its selection as a site for focused research.

Despite severe criminal penalties, induced abortion is a frequent occurrence. One study conducted in the KRG found that approximately 28% of married women reported having undergone an induced abortion at some point. Gynecologists in the region's hospitals regularly encounter patients presenting with unwanted pregnancies and, more alarmingly, the life-threatening complications of unsafe abortions, including incomplete procedures, severe hemorrhage, and systemic infection or sepsis.[13] In the absence of safe and legal pathways, women are driven to desperate and dangerous measures, such as obtaining unregulated medications on the black market or seeking services from unqualified and clandestine providers, which can lead to permanent injury or death.[14]

At present, legal abortion in both Iraq and the KRG is possible only through a medical expert committee, which interprets vague legal terms such as "serious threat to her life." In practice, this creates significant ethical and practical challenges. Women must present their case before strangers, sometimes with mandatory spousal consent, raising concerns about bodily autonomy. Physicians on these committees must navigate ambiguous laws, personal morality, and societal pressures.[14-16]

Given the complex interplay of legal, religious, and social factors, there is a significant gap in understanding the practical ethics of abortion access in the Kurdistan Region of Iraq.

Objectives of the project:

- To identify the indications of therapeutic termination of pregnancy.
- To investigate the obstetrical background of these patients.
- To assess the outcomes of decisions and their relation to patient attitudes.
- To describe the mode of termination.

METHODOLOGY

Study Design and Setting

This study was a descriptive cross-sectional analysis conducted at the Ethical Abortion Decision-Making Committee of the Maternity Teaching Hospital in Erbil, KRG. The hospital is a tertiary referral center where pregnancy termination requests are evaluated under legal and ethical regulations. The study covered a 10-month period from September 2024 to August 2025, encompassing all eligible cases presented to the committee during this timeframe.

Study Population and Sampling

The study population included pregnant women seeking termination of pregnancy who were referred to the Ethical Abortion Committee for evaluation. A consecutive sampling approach was used, whereby all women meeting the inclusion criteria (defined below) and attending the committee between September 2024 and May 2025 were invited to participate. This yielded a final sample of 200 participants who consented and met eligibility requirements.

Inclusion and Exclusion Criteria

Inclusion criteria

(a) Pregnant women seeking termination who appeared before the committee and met the KRG's legal conditions for abortion (i.e., cases ostensibly falling under the "serious threat to the mother's life" or severe fetal indication provision); (b) gestational age ≤24 weeks (at or below the legal gestational limit for termination, confirmed by ultrasound dating); and (c) provision of informed consent to participate in the study. All participants had to voluntarily agree to share their information for research, with assurances of confidentiality.

Exclusion criteria

(a) Ectopic or non-uterine pregnancies – such cases require emergency surgical management and do not go through the committee process, so they were outside the study's scope; (b) pregnancies resulting from incest or rape – these extraordinary cases are handled separately by special legal provisions and were not included in this study; (c) advanced gestation >24 weeks – any case beyond 24 weeks was ineligible due to legal restrictions on late-term abortion; (d) women who declined to participate in the study (though in practice, none refused).

All women who met the inclusion criteria and none of the exclusion criteria were enrolled. In summary, the cohort represents the entire population of legal abortion requests reviewed by the committee in that period, excluding only cases outside the committee's mandate.

Data Collection Methods

Data were collected using a combination of patient interviews, structured questionnaires, and review of medical records. Upon referral to the committee, each participant was interviewed in a private setting to obtain socio-demographic information (such as age, education, residence, and socio-economic status) and relevant obstetric/medical history. A standardized questionnaire was administered, which covered the indication for abortion request (e.g., fetal anomalies, maternal health conditions), past obstetric history (including previous abortions or known congenital anomalies), and the patient's knowledge or attitudes regarding abortion. Additional clinical data (gestational age, ultrasound findings, and committee decision outcome) were extracted from the patients' medical records

and the committee's official reports. To ensure accuracy, data collection was performed by trained researchers and validated by cross-checking with hospital records.

Ethical Considerations

The study protocol was reviewed and approved by the Ethics Committee of Hawler Medical University, Erbil (no = 14 in 2025). Written informed consent was obtained from every participant. Confidentiality was maintained by anonymizing all data.

Statistical Analysis

After completing data collection, all responses and clinical information were coded and entered into the Statistical Package for the Social Sciences (SPSS) software for analysis. Descriptive statistics were used to summarize the data: categorical variables were presented as frequencies and percentages, and continuous variables (such as maternal age) as means with standard deviation (mean ± standard deviation). For inferential analysis, appropriate statistical tests were applied to explore associations between study variables and outcomes. In particular, comparisons between groups (e.g., cases where the committee approved vs. refused the abortion request) were made using Chi-square tests for categorical variables, with Fisher's exact test employed when expected cell counts were small. Differences in continuous variables were evaluated using independent-sample t-tests. A $P < 0.05$ was considered statistically significant for all analyses. All statistical analyses were reviewed by a biostatistician to ensure accuracy and validity of the results.

Note: Although cases requiring immediate surgical intervention (like ectopic pregnancies) were excluded by design, a small number of included cases ultimately underwent surgical abortion procedures *as the method of pregnancy termination*. This typically occurred when a committee-approved case required a dilatation and evacuation (D&E) due to clinical indications (e.g., advanced gestation or failed medical induction). These instances are reported in the outcomes and do not represent a violation of criteria but rather a different method of completing the termination.

RESULT AND DISCUSSION

Result

A total of 200 pregnant women were evaluated, with a mean age of 30.3 ± 7.2 years. The majority of women were multigravida (69.0%), presented in the second trimester (69.0%), and had low educational attainment (36.0% illiterate). Consanguineous marriage was reported by 41.5% of participants. Key sociodemographic and obstetric characteristics are detailed in Table 1.

The committee approved termination for 121 (60.5%) women and refused it for 79 (39.5%). The indication for termination was the most significant factor influencing the committee's decision ($P < 0.001$). As shown in Table 2, requests for severe fetal anomalies had high approval rates, including for thalassemia (100%), other congenital anomalies (83.3%), and neural tube defects (NTD) or central nervous system abnormalities (80.0%). In contrast, requests based on maternal diseases – the only explicit legal ground – were approved in only 36.6% of cases. Requests for non-lethal genetic or chromosomal anomalies had the lowest approval rate (18.2%).

Ultimately, 116 pregnancies (58.0%) were terminated, while 84 (42.0%) were continued. Medical induction was the most common termination method (106 cases). Surgical termination (dilatation and evacuation) was performed in 10 cases, typically following an incomplete or failed medical abortion. The final pregnancy outcome was significantly

Table 1: Sociodemographic and obstetric characteristics (n=200)

Variable	Category	*n*	%
Age (years)	Mean±standard deviation	30.3±7.2	
Residence	Inside Erbil city	103	51.5
	Outside Erbil city	97	48.5
Education	Illiterate	72	36.0
	Primary	51	25.5
	Secondary	22	11.0
	University	55	27.5
SES*	Low	72	36.0
	Medium	85	42.5
	High	43	21.5
Gravidity	Primigravida	38	19.0
	Multigravida	138	69.0
	Grand multigravida	24	12.0
Gestation	First trimester	62	31.0
	Second trimester	138	69.0
Consanguinity	Yes	83	41.5
	No	117	58.5
Previous abortion	Yes	66	33.0
	No	134	67.0
Previous child with anomaly	Yes	31	15.5
	No	169	84.5

*SES: Socioeconomic status

Table 2: Committee decision by indication for termination (n=200)

Indication for termination	Approved *n* (%)	Refused *n* (%)	Total *n* (%)	*P*-value
NTD and CNS abnormalities	44 (80.0)	11 (20.0)	55 (100)	<0.001
Maternal diseases	15 (36.6)	26 (63.4)	41 (100)	
Hydrops fetalis	16 (66.7)	8 (33.3)	24 (100)	
Congenital anomalies	35 (83.3)	7 (16.7)	42 (100)	
Thalassemia	5 (100.0)	0 (0.0)	5 (100)	
Genetic/ chromosomal anomalies	6 (18.2)	27 (81.8)	33 (100)	

NTD: Neural tube defect, CNS: Central nervous system

associated with gestational age and parity ($P < 0.05$) but not with the woman's personal belief about abortion [Table 3]. Only 25.8% of first-trimester pregnancies were terminated, compared to 72.5% of second-trimester pregnancies.

Notably, the fetal gender was unknown in 54.5% of cases, likely because many referrals were based on anomaly scans performed before 18 weeks of gestation, when sex determination is less accurate.[8] In addition, 5.5% of women did not know their blood group, suggesting potential gaps in prior antenatal care.

Discussion

This study provides a critical insight into the functioning of the Ethical Abortion Decision-Making Committee in Erbil, revealing a significant divergence between the strict letter of the law and its practical application. The findings highlight three key themes: the committee's creation of an ethical hierarchy, the paradoxical refusal of maternal health cases, and the broader public health implications of this system.

The most striking finding is the committee's de facto policy of approving terminations for severe fetal anomalies, an indication not explicitly covered by KRG law. Approval rates of 80% or higher for conditions like NTDs and other congenital anomalies suggest a pragmatic reinterpretation of the law.[16,17] This practice aligns with contemporary Islamic jurisprudence, which increasingly considers preventing "extreme hardship" (*haraj*) for the family and avoiding a life of severe suffering for the child, particularly before ensoulment (*nafkh al-ruh*), often cited at 120 days of gestation.[18,19] As 69% of women presented in the second trimester, most decisions fell within a timeframe where termination for severe anomalies finds justification in modern Islamic legal thought.[20] The Kurdish population is predominantly of the Shafi'i school, which can be restrictive; however, the committee's practice suggests an adoption of the more widely accepted 120-day threshold.[21,22]

Paradoxically, while showing flexibility on fetal grounds, the committee was exceptionally stringent when applying the law's explicit "life of the mother" exception, refusing 63.4% of such requests. This is troubling, as saving the pregnant woman's life is the single point of unequivocal consensus across all schools of Islamic thought and the legal basis for abortion in nearly every MENA country.[6] This high refusal rate suggests a "chilling effect," where physicians in a punitive legal environment fear liability for a subjective judgment about maternal risk.[23] Without clear clinical guidelines, the committee appears to require a near-certain risk of death, creating an inverted ethical hierarchy where a non-viable fetus is prioritized over a sick mother.[24,25]

Finally, the committee's caseload reflects upstream public health challenges. The high rate of consanguineous marriage (41.5%) is strongly linked to the genetic and congenital anomalies that constituted 79.5% of all cases.[26,27] Compounded by low educational attainment (36% illiterate), these factors show that the committee is a downstream bottleneck for a population-level genetic risk profile.[28] It functions as a reactive mechanism in the absence of a proactive public health strategy, such as widespread genetic screening and counseling. The high termination rate in the second trimester (72.5%) further illustrates this; it is not medically intuitive but reflects a selection bias, as severe anomalies are typically detected at the mid-trimester scan.[29] This "filter effect" masks a cohort of women denied a wanted abortion in the first trimester, likely for unapproved reasons, pushing them toward unsafe alternatives.[23,30,31]

Table 3: Final pregnancy outcome by gestation, parity, and patient belief

Variable	Terminated *n* (%)	Continued *n* (%)	Total *n* (%)	*P*-value
Gestation				<0.001
First trimester	16 (25.8)	46 (74.2)	62 (100)	
Second trimester	100 (72.5)	38 (27.5)	138 (100)	
Parity				0.032
Primigravida	28 (73.7)	10 (26.3)	38 (100)	
Multigravida	72 (52.2)	66 (47.8)	138 (100)	
Grand multigravida	8 (33.3)	16 (66.7)	24 (100)	
Idea about abortion				0.249
Against	8 (42.1)	11 (57.9)	19 (100)	
Not Against	108 (59.7)	73 (40.3)	181 (100)	

CONCLUSION

This study reveals that the Ethical Abortion Decision-Making Committee in Erbil operates not as a simple enforcer of the law, but as a site of pragmatic negotiation between legal text, medical necessity, and Islamic ethical principles. It has established a de facto policy of approving terminations for severe fetal anomalies while paradoxically applying an exceedingly strict interpretation of the law's explicit "life of the mother" exception. The committee's substantial refusal rate of nearly 40% channels a significant number of women toward the dual risks of unsafe clandestine abortion or the adverse consequences of carrying an unwanted or high-risk pregnancy to term. This research provides crucial, context-specific data that contribute to global scholarly debates on the real-world application of abortion law and its profound impact on women's health and rights in legally restrictive settings.

Recommendations

Based on the findings, the following evidence-based recommendations are proposed:

For Policymakers and the Ministry of Health: Develop and disseminate standardized clinical guidelines to provide objective criteria for interpreting the "serious threat to her life" clause. This would reduce subjectivity, protect clinicians from legal ambiguity, and ensure women with serious maternal health conditions receive legally entitled care.

For Public Health Authorities: Implement an upstream public health strategy to address the high prevalence of congenital anomalies. This should include integrating voluntary, confidential, and culturally sensitive preconception and prenatal genetic counseling and screening services into

primary healthcare, particularly for couples in consanguineous unions.

For Healthcare Institutions: Establish a formal psychosocial support pathway for all women referred to the committee. There is an ethical duty of care for the nearly 40% of women whose requests are denied. A mandatory referral to professional counseling and social support services must be integrated to mitigate the adverse mental and physical health outcomes associated with being denied a wanted abortion.

For the Research Community**:** Conduct further research to build on these findings. In-depth qualitative studies are needed to explore the decision-making calculus of committee members and the lived experiences of women. A prospective cohort study is also essential to track the health and socioeconomic outcomes of women who are denied a legal abortion in the Iraqi context to strengthen the case for evidence-based legal reform.

Study Limitations and Future Research Directions

This study has several limitations that should be acknowledged. As a descriptive, cross-sectional study conducted at a single tertiary hospital, its findings may not be generalizable to the entire KRG or other parts of the country. The quantitative design captures the "what" of the committee's decisions but not the "why"; it cannot explain the reasoning of the committee members or the lived experiences and perceptions of the women who appear before them. The study also does not follow women who were refused termination, so the discussion of their outcomes is based on inference from international literature.

These limitations point to critical directions for future research:

First, qualitative studies are urgently needed. Interviews with committee members would illuminate the ethical, legal, and personal factors that shape their decision-making. Interviews with women who have been both approved and refused by the committee would provide invaluable insight into their experiences, coping mechanisms, and the impact of the process on their lives. Second, a prospective cohort study, modeled on the Turnaway Study, is essential to track the health, psychological, and socioeconomic outcomes of women who are denied a legal abortion in the Iraqi context. This would provide local, context-specific data to either validate or nuance the findings from Western settings and strengthen the case for legal reform. Finally, a larger, multi-center or population-based survey is needed to more accurately estimate the true incidence of requests for legal abortion, the prevalence of unsafe abortion, and the associated morbidity and mortality across the region.

REFERENCES

1. World Health Organization. *Abortion*. Geneva: World Health Organization, 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/abortion [Last accessed on 2024 Mar 06].
2. World Health Organization. *Safe Abortion: Technical and Policy Guidance for Health Systems*. Geneva: World Health Organization, 2003.
3. C. Calvert, O. O. Owolabi, F. Yeung, R. Pittrof, B. Ganatra, Ö. Tunçalp, A. J. Adler and V. Filippi. The magnitude and severity of abortion-related morbidity in settings with limited access to abortion services: A systematic review and meta-regression. *BMJ Global Health*, vol. 3, no. 3, p. e000692, 2018.
4. World Health Organization. *WHO Issues New Guidelines on Abortion to Help Countries deliver Lifesaving Care. Departmental News*. Geneva: World Health Organization, 2022.
5. G. K. Shapiro. Abortion law in Muslim-majority countries: An overview of the Islamic discourse with policy implications. *Health Policy and Planning*, vol. 29, no. 4, pp. 483-494, 2014.
6. I. Maffi and L. Tønnessen. The limits of the law: Abortion in the Middle East and North Africa. *Health and Human Rights*, vol. 21, no. 2, p. 1, 2019.
7. P. E. Ekmekci. Abortion in Islamic ethics, and how it is perceived in Turkey: A secular, Muslim country. *Journal of Religion and Health*, vol. 56, no. 3, pp. 884-895, 2017.
8. Center for Reproductive Rights, UN Population Fund, World Health Organization, Iraq: Abortion Policies, 2023. Available from: https://abortion-policies.srhr.org/country/iraq [Last accessed on 2024 Mar 06].
9. *Abortion as a Human Right in the Criminal Laws of Iran and Iraq*. Sanad. Available from: https://sanad.iau.ir/fa/journal/downloadfileex/1184602 [Last accessed on 2025 Jun 27].
10. *Iraqi Penal Code*. Iraq: The Learning Partnership, 2020. Available from: https://learningpartnership.org/resource/penal-code-iraq-document-english [Last accessed on 2024 Jun 28].
11. M. Bagi. Same culture but different governments: Attitudes toward abortion among Kurdish people in Iranian and Iraqi Kurdistan. *Asian Ethnicity*, vol. 25, no. 1, pp. 121-143, 2024.
12. Rudaw. *Women's Rights Activists Say Kurdistan's New Abortion Law Doesn't go far Enough*. Rudaw. Available from: https://www.rudaw.net/english/kurdistan/16092020 [Last accessed on 2025 Jun 27].
13. G. Khalid, A. M. Saleh, N. Shabila, M. Bogren and D. Shakely. Attitudes towards induced abortion among gynecologists in Kurdistan region of Iraq. *BMC Women's Health*, vol. 23, p. 609, 2023.
14. Mara-Med. *Abortion in Iraq: Challenges and New Horizons*. Baghdad: Mara-Med, 2023. Available from: https://mara-med.org/abortioniniraq-challengesandnewhorizons [Last accessed on 2024 Jun 28].
15. The New Arab. *In Kurdistan, a Feminist NGO Pushes for more Abortion Rights*. The New Arab, 2020. Available from: https://www.newarab.com/features/kurdistan-feminist-ngo-pushes-more-abortion-rights [Last accessed on 2025 Jun 27].
16. R. Cohen-Almagor and Y. Snir. The decision-making process of abortion high committees. *Harefuah*, vol. 138, no. 12, pp. 1009-1014, 2000.
17. M. E. Eppinger. The health exception. *Georgetown Journal of Gender and the Law*, vol. 17, pp. 665-690, 2016.
18. B. S. Jones and T. A. Weitz. Legal barriers to second-trimester abortion provision and public health consequences. *American Journal of Public Health*, vol. 99, no. 4, pp. 623-630, 2009.
19. H. Iqbal, A. Habib and S. Amer. Abortion-an Islamic perspective. *Ethics*, vol. 2, no. 1, pp. 1-9, 2019.
20. N. Al Riyami. The role of law in shaping regulations on fetal anomalies and abortion in Oman. *Oman Medical Journal*, vol. 39, no. 4, p. e645, 2024.
21. M. A. Al-Bar. Abortion: Shafi'i Perspective. In: *Abortion: Global Positions and Practices, Religious and Legal Perspectives*. New York: Springer, 2021, pp. 147-153.
22. J. A. Bush. *Between Muslims: Religious Difference in Iraqi Kurdistan*. Stanford, CA: Stanford University Press, 2020.

23. A. Busby. *Culture Summary: Kurds*. HRAF, 1996. Available from: https://ehrafworldcultures.yale.edu/document?id=ma11-000 [Last accessed on 2025 Jul 06].
24. Harvard Medical School Center for Bioethics. *Abortion Bans Put Ethics Committees in Difficult Position*, 2025. Available from: https://bioethics.hms.harvard.edu/news/abortion-bans-put-ethics-committees-difficult-position [Last accessed on 2025 Jul 06].
25. E. Kendal. All abortions are medically necessary. *Clinical Ethics*, vol. 18, no. 3, pp. 306-311, 2023.
26. K. M. Hedayat, P. Shooshtarizadeh and M. Raza. Therapeutic abortion in Islam: Contemporary views of Muslim Shiite scholars and effect of recent Iranian legislation. *Journal of Medical Ethics*, vol. 32, no. 11, pp. 652-657, 2006.
27. A. Cerovac, A. Serak, H. Zukic, E. Nevacinovic, D. Ljuca, A. Brigic and D. Habek. Ethical and legal dilemmas around termination of pregnancy for severe fetal hydrocephalus, spina bifida aperta and meningomyelocoella. *Medical Archives*, vol. 73, no. 2, pp. 126-130, 2019.
28. F. M. Lafta. Consanguineous marriages and some reproductive health parameters for sample from families in Baghdad, Iraq. *Al-Mustansiriyah Journal of Science*, vol. 21, no. 5, pp. 344-354, 2010.
29. A. M. Khayat, B. G. Alshareef, S. F. Alharbi, M. M. AlZahrani, B. A. Alshangity, N. F. Tashkandi and B. G. Alshareef. Consanguineous marriage and its association with genetic disorders in Saudi Arabia: A review. *Cureus*, vol. 16, no. 2, p. e538882024.
30. N. P. Shabila and T. S. Al-Hadithi. Women's health and status in the Kurdistan region of Iraq: A review. *Crescent Journal of Medical and Biological Sciences*, vol. 5, pp. 70-75.
31. T. Reischer, I. Limbach, A. Catic, K. Niedermaier, V. Falcone and G. Yerlikaya-Schatten. Factors influencing the duration of termination of pregnancy for fetal anomaly with mifepristone in combination with misoprostol. *Journal of Clinical Medicine*, vol. 12, no. 3, p. 869, 2023.