

## Human Fertility

an international, multidisciplinary journal dedicated to furthering research and promoting good practice

ISSN: 1464-7273 (Print) 1742-8149 (Online) Journal homepage: [www.tandfonline.com/journals/ihuf20](http://www.tandfonline.com/journals/ihuf20)

# Patient perceptions on the use of artificial intelligence (AI) in fertility treatment

Niamh Fee , Louise E. Glover , Renato Bauman & David A. Crosby

To cite this article: Niamh Fee , Louise E. Glover , Renato Bauman & David A. Crosby (2025) Patient perceptions on the use of artificial intelligence (AI) in fertility treatment, Human Fertility, 28:1, 2591161, DOI: [10.1080/14647273.2025.2591161](https://doi.org/10.1080/14647273.2025.2591161)

To link to this article: <https://doi.org/10.1080/14647273.2025.2591161>



© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 30 Nov 2025.



Submit your article to this journal [↗](#)



Article views: 474



View related articles [↗](#)



View Crossmark data [↗](#)

RESEARCH ARTICLE

 OPEN ACCESS  Check for updates

## Patient perceptions on the use of artificial intelligence (AI) in fertility treatment

Niamh Fee<sup>a,b,c</sup>, Louise E. Glover<sup>a,c</sup>, Renato Bauman<sup>a</sup> and David A. Crosby<sup>a,b,c</sup>

<sup>a</sup>Merrion Fertility Clinic, Dublin, Ireland; <sup>b</sup>National Maternity Hospital, Dublin, Ireland; <sup>c</sup>School of Medicine, University College Dublin, Dublin, Ireland

### ABSTRACT

The objective was to evaluate patient knowledge, attitudes and perceptions on the use of artificial intelligence (AI) technology within a fertility clinic. Patients were undergoing treatment between June 2024 and December 2024. The Main Outcome Measure(s) were Likert Comfort levels scale and Qualitative analysis of responses. Overall, 206 responses were received. While 41% believed that AI could improve outcomes, most (56%) indicated that they 'did not know'. Overall, respondents were comfortable with AI being used in administrative tasks (69%), assisting with clinical decisions (67%) and assisting an embryologist (74%). However, respondents were not comfortable with AI alone performing embryo selection (93.1%), conducting semen analysis (89.2%), sperm selection in ICSI (90.2%) or reporting an ultrasound scan (84.5%). Men were more likely to be comfortable with AI alone determining which embryo to transfer ( $p = 0.0037$ ), conducting semen analysis ( $p = 0.01$ ), and sperm selection for ICSI ( $p = 0.02$ ). Dominant themes regarding the benefits of AI included its use as an assistant, improving efficiency, and reducing error, while dominant themes of patient concerns included human replacement, loss of empathy, and the need for monitoring. Patients have concerns regarding the introduction of AI into fertility care, with men more likely than women to be comfortable.

### ARTICLE HISTORY

Received 2 May 2025  
Accepted 5 November 2025

### KEYWORDS

AI; comfort; fertility; embryology; clinical; ART

## Introduction

Artificial intelligence (AI) in healthcare refers to the applications of machine learning to improve various aspects of healthcare delivery. Since the development of computer systems, AI and its use in healthcare has been increasing and evolving. However, over the last 10 years there has been exponential growth in the areas where AI is being developed, and research is continually being performed to test AI against traditional decision making (Alowais et al., 2023).

Within the field of assisted reproduction, AI is being developed so it can be used to aid in embryo selection, semen analysis, predicting treatment outcomes, patient monitoring and clinical decision making (Canon et al., 2024; Salih et al., 2023). The use of AI within a fertility clinic can begin from an initial patient visit by using an AI model to give a likelihood of success using up to 40 variables (Choi et al., 2013). Followed by using a model to choose gonadotrophin dose and monitor response to stimulation (Canon et al., 2024). Semen analysis AI models have shown great potential to reduce subjectivity and reduce time taken in analysis of morphology and motility (Cherouveim et al., 2023). Many of the AI models that have been developed either for embryo selection or for ovarian stimulation have been tested retrospectively and have yet to be validated clinically. One prospective study which was recently published compared a deep learning platform for embryo selection against traditional morphology based embryo selection in a randomised non-inferiority trial and was not able to demonstrate non-inferiority for AI (Illingworth et al., 2024).

There is potential to use AI as a tool to assist clinicians and embryologists in clinical decision making to reduce error and save time. An example is the use of an AI platform to aid embryo selection for embryologists; this has been shown in a pilot study to improve selection of embryos which result in a clinical pregnancy (Kim et al.,

**CONTACT** Niamh Fee  [nfee@merrionfertility.ie](mailto:nfee@merrionfertility.ie)  Merrion Fertility Clinic, 60 Lower Mount Street, Dublin, Ireland.

© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

2024). In particular, the addition of AI assistance improved embryo selection for embryologists with fewer than 5 years' experience and this group also had more trust in AI when compared with more experienced embryologists. There can be significant variability in current AI models for embryo selection which emphasises the need for continued human oversight and further development of current models (Kanakasabapathy et al., 2025).

As research continues to further test and develop these AI programs, there has been little research on patient knowledge, attitudes and perceptions around the use of AI within a fertility clinic and treatment. This study aims to investigate how patients feel about the use of AI during their fertility treatment to better inform those working in development of AI in the reproductive medicine setting about how these technologies will be received.

## Materials and methods

### Study participants

This cross-sectional survey study was conducted at a private fertility clinic associated with the National Maternity Hospital in Dublin, Ireland. The clinic sees both private and public patients for assisted reproductive treatments. The clinic does not currently use any AI platform and therefore patients are not given any information on the use of AI. Both men and women who underwent fertility assessment and/or treatment between June 2024 and December 2024 were identified using the electronic patient management system. An anonymous survey was sent via a secure email link using Survey Monkey. The survey remained open for 28 days, with a reminder email sent after 14 days. This study was approved by the Research Ethics Committee at the National Maternity Hospital (reference EC33.2024). Participants indicated their consent at the start of the survey by selecting 'I consent, begin the study'.

### Study questionnaire

The questionnaire gathered patient demographics, patient education status, previous ART and outcome; there were a total of 19 questions. Authors NF, LG, RB and DC constructed the survey following review of literature examining patients' use of AI in other medical specialities (Aggarwal et al., 2021; Scott et al., 2021). Validation of the survey by non-study team members for comprehension, readability and timing was performed prior to commencing the study. Patient comfort levels (1 = not at all comfortable, 2 = not very comfortable, 3 = somewhat comfortable, 4 = very comfortable) with the use of AI in the fertility clinic were assessed using a Likert four-point comfort scale. Options for patient comments were included. A description of AI and its potential application was given to the participants; no visual aids were used to describe the technology. The questionnaire is available on request.

### Statistical analysis

Data were analysed based on age, previous experience with AI, number of previous IVF cycles and previous ART outcome. GraphPad prism was used to explore descriptive statistics and frequencies. Categorical variables were analysed using  $\chi^2$  test or Fisher's exact test where appropriate; a p-value of < 0.05 was considered significant. The free text data were analysed using a qualitative content analysis approach. NVivo 20 was used to code and analyse the qualitative data. Respondent gender was included as a tag on the coded data. The content analysis followed three main steps. The researcher (NF) initially immersed themselves in the data to gain an overall understanding and develop initial impressions. The second step was coding the free text into single emergent ideas. The final step was examining the codes to identify and generate themes in relation to the research question.

## Results

### Participant characteristics

A total of 1368 patients were found to be eligible for inclusion and were invited to participate in the survey questionnaire study. Overall, 206 responses were received, for a response rate of 15%. Among the respondents,

77.7% (n = 160) were female and 22.3% (n = 46) were male. Most respondents were between the age of 35 and 39 years (48.5%, n = 100) with 13.6% (n = 28) aged 30–34, 35% (n = 72) aged 40–44 and 2.4% (n = 5) aged over 45. Most respondents were of white/Caucasian ethnicity (92.7%, n = 191). Most participants (94.7%, n = 195) had completed a third level degree or higher and 90% (n = 185) were full-time employed (Table 1). Invitations to participate were sent to individuals and we did not gather information on whether couples responded.

As outlined in Table 2, most participants had undergone previous fertility treatment, including IVF (44.9%, n = 92), ICSI (58.5%, n = 120), intrauterine insemination (IUI) (14.6%, n = 30) or ovulation induction (10.7%, n = 22).

### Experience with AI and attitudes to its use in a fertility clinic

The majority of respondents (53%, n = 109) had previous experience with AI and 41% (n = 84) believed that AI could improve outcomes in a fertility clinic. However, the majority (55.6%, n = 114) indicated that

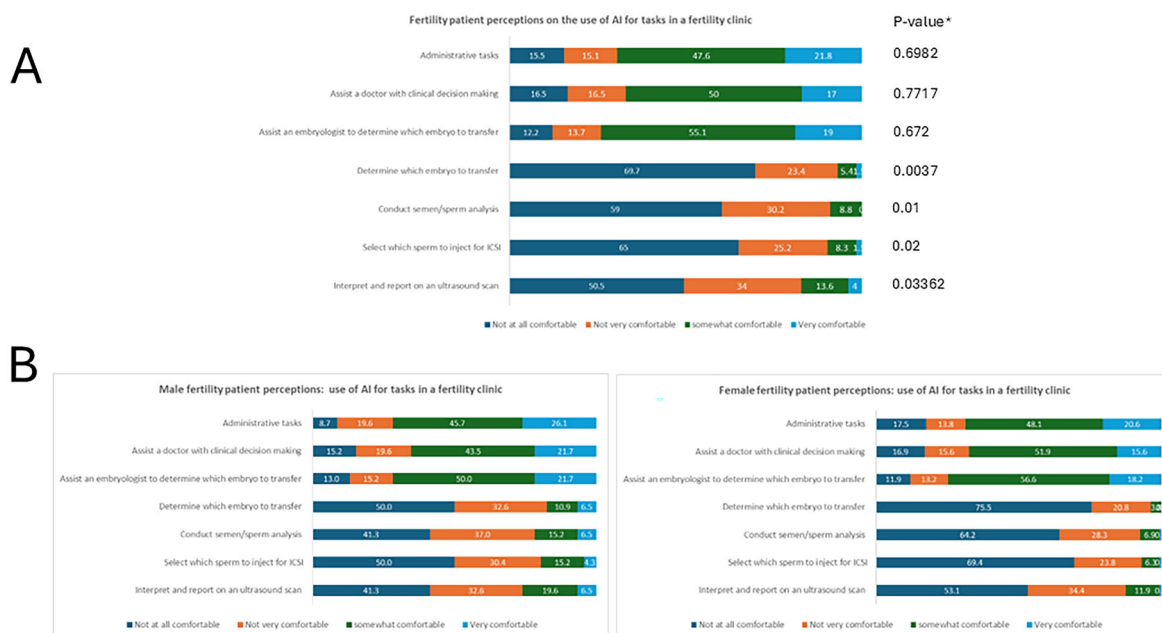
**Table 1.** Demographics and previous fertility treatment of survey respondents.

Characteristic	All n = 206	Female n = 160	Male n = 46	P-value
Gender, n (%)				
Female	160 (77.7%)	n/a	n/a	
Male	46 (22.3%)	n/a	n/a	
Other	0			
Age brackets (years), n (%)				
25–29	1 (0.5%)	1 (0.6%)	0 (0%)	
30–34	28 (13.6%)	26 (16.3%)	2 (4.3%)	
35–39	100 (48.5%)	75 (46.9%)	25 (54.3%)	
40–44	72 (35.0%)	58 (36.2%)	14 (30.4%)	
45+	5 (2.4%)	0	5 (11.0%)	0.0004
Self-identified ethnicity, n (%)				
White/Caucasian	191 (92.7%)	148 (92.5%)	43 (93.5%)	
Black	3 (1.4%)	3 (1.9%)	0 (0%)	
Asian	7 (3.4%)	7 (4.4%)	0 (0%)	
Hispanic	2 (1.0%)	1 (0.6%)	1 (2.2%)	
Other/prefer not to say	3 (1.5%)	1 (0.6%)	2 (4.3%)	0.127
Educational attainment, n (%)				
Primary level or equivalent				
Secondary level or equivalent	8 (3.9%)	6 (3.7%)	2 (4.3%)	
Third level degree or equivalent	69 (33.5%)	50 (31.3%)	19 (41.3%)	
Postgraduate degree or equivalent	126 (61.2%)	101 (63.1%)	25 (54.4%)	
Other	3 (1.4%)	3 (1.9%)	0 (0%)	0.489
Employment status, n (%)				
Student	3 (1.5%)	3 (1.9%)	0 (0%)	
Full time employed	185 (89.8%)	141 (88.1%)	44 (95.6%)	
Part time employed	11 (5.3%)	11 (6.9%)	0 (0%)	
Unemployed	4 (1.9%)	3 (1.9%)	1 (2.2%)	
Unpaid home or caring work	0 (0%)	0 (0%)	0 (0%)	
Long term sickness/disability	1 (0.5%)	1 (0.6%)	0 (0%)	
Other	2 (1.0%)	1 (0.6%)	1 (2.2%)	0.36

**Table 2.** Previous treatment characteristics of study participants.

Characteristic	Total (n = 206)
Fertility treatments, n (%)	
Ovulation induction/ IUI	47 (22.8)
IVF/ICSI	193 (93.7)
Both OI/IUI and IVF/ICSI	40 (19.4)
No treatment	5 (2.4)
Surrogacy	1 (0.5)
Number of IVF/ICSI treatment cycles, n (%)	
1	71 (41.5)
2	52 (30.4)
3	23 (13.5)
4	13 (7.6)
>4	12 (7)
Livebirth treatment outcome, n (%)	
Yes	36 (21.1)
No	135 (78.9)

\*Patients may have had > 1 treatment.



**Figure 1.** Patient comfort levels with use of AI to conduct tasks during fertility treatment. (a) All respondents. (b) Responses by gender.

\*Gender differences calculated using Fisher's exact test.

they 'did not know' if AI would improve outcomes. Overall, 69.4% ( $n = 143$ ) of respondents indicated that they were comfortable with AI being used in administrative tasks (Figure 1(a)). Most (67%,  $n = 138$ ) were also comfortable when AI was used to assist with clinical decisions. A large majority (74.1%,  $n = 152$ ) were comfortable with the use of AI to assist an embryologist with embryo selection. However, respondents were not comfortable with AI independently directing certain aspects of fertility treatment, such as deciding which embryo to transfer (93.1%,  $n = 191$ ), conducting semen analysis (89.2%,  $n = 183$ ), sperm selection in ICSI (90.2%  $n = 186$ ) or the interpretation of an ultrasound scan (84.5%  $n = 174$ ). The vast majority (91.8%,  $n = 189$ ) believed they should be informed if AI is being used during their treatment.

Further analysis of participant attitudes towards AI use in fertility treatment tasks was performed by stratifying grouped responses ('comfortable' [3 + 4] and 'not comfortable' [1 + 2]) by gender, previous experience of AI, no previous cycles versus more than one previous cycle, and livebirth outcome. There were no significant differences in the responses based on previous experience with AI, previous cycles or livebirth. Interestingly, men were more likely than women to be comfortable with AI alone determining which embryo to transfer ( $n = 8$  (17.4%) vs  $n = 6$  (3.8%);  $p = 0.0037$ ), AI alone conducting semen analysis ( $n = 10$  (21.7%) vs  $n = 12$  (7.5%);  $p = 0.01$ ), AI alone selecting which sperm to inject for ICSI ( $n = 9$  (19.5%) vs  $n = 11$  (6.9%);  $p = 0.02$ ) and AI interpreting and reporting on an ultrasound scan ( $n = 12$  (26.1%) vs  $n = 20$  (12.5%);  $p = 0.0362$ ) (Figure 1(b)). Notably, this is despite no significant self-reported difference in experience with AI (60.9% vs 50.3%;  $p = 0.2$ ).

### Patients perceived benefits and concerns using AI in a fertility clinic

Study participants were invited to include open-ended text responses outlining their view on the benefits and concerns regarding the use of AI in a fertility clinic. Overall, 87% ( $n = 180$ ) provided text responses.

Content analysis for the perceived benefits and concerns of the use of AI in a fertility clinic are shown in Table 3. Both men and women felt that the biggest benefit of AI was its use as an assistant to a clinician or embryologist; 'AI can assist medical professionals in interpreting results' and '[AI can] enhance current decision making'. Women commented more frequently that efficiency was the second largest benefit with AI '[can] identify something a human can't more efficiently'. Men commented more frequently on the ability of AI to analyse data and trends; 'accurately analysis of data, leading to better

**Table 3.** Dominant themes for benefits of and concerns regarding AI.

	Female responses n (%)	Male responses n (%)
Benefit of using AI in a fertility clinic		
1. AI as an assistant to clinician or embryologist	38 (33%)	6 (26%)
2. Improving efficiency	23 (12%)	5 (22%)
3. Analysing data and spotting trends	17 (10.9%)	6 (26%)
4. Reducing human error	15 (10.8%)	2 (9%)
5. Use of AI in administrative tasks	13 (7.7%)	2 (9%)
Concerns with use of AI in a fertility clinic		
1. The replacement of humans with computers	37 (27%)	6 (25%)
2. Loss of empathy	29 (21%)	5 (20%)
3. Potential of AI to be wrong	32 (23%)	6 (33%)
4. A lack of evidence for AI in fertility	12 (8.7%)	2 (8%)
5. The need for AI to be monitored	11 (8.0%)	1 (4%)

\*% does not equal 100, as not all responses included only dominant themes.

outcomes'. Reduction of human error was also noted as a potential benefit of AI *'it could assist in reducing human error if it is used in [tandem] with doctors'*. The use of AI in administrative tasks was seen as a potential benefit *'AI can reduce administrative burden ... reduce repetitive decision-free admin tasks'*.

Male respondents were most concerned about the possibility of AI being wrong, noted in 33% of responses; *'AI regularly makes mistakes, and cannot identify patterns on which it has not been trained'* and *'AI is unreliable until proven otherwise'*.

Women were most concerned about the replacement of humans by AI, indicated in 27% of responses; *'I wouldn't want it to replace human interactions'* and *'there is no substitute for human judgement'*. Lack of empathy was a concern for respondents, *'IVF patients also need the human support on tough days ... the kind word, empathy and kindness from a doctor, nurse, embryologist, admit makes all the difference'*. Also the need for AI to be monitored was a theme noted in patients concerns, *'I would like to know it has gone through rigorous checks before being used in clinic decisions.'*

## Discussion

In recent years, there has been a significant growth in research into the use of AI within medicine and the development of AI systems. However, there is a lack of comparative research on how patients perceive AI, or to understand their concerns. This study is, to our knowledge, the first to examine differences in male and female patients' perspective on the use of AI within a fertility clinic.

AI can be utilised at a number of steps during a patients' fertility counselling, assessment or treatment (Letterie, 2023). An AI platform can use up to 40 variables to give patients a personalised and quantitative measure of the likely outcomes of fertility treatment (Choi et al., 2013), which can help patients set their expectations for treatment outcome. AI platforms have been developed to guide gonadotrophin dosing to optimise embryo yield and reduce the risk of ovarian hyperstimulation (Canon et al., 2024). AI can assist with monitoring scheduling to limit the number of clinic visits without affecting outcome and could also be used to decide optimal trigger day (Houry et al., 2023).

### Main findings

While patients were comfortable overall with AI being utilised to assist with tasks such as embryo selection and clinical decisions, they were not comfortable with AI alone being used for semen analysis, sperm selection or ultrasound interpretation. This finding is similar to previously published studies that have shown patients prefer the use of AI as a tool to help physicians incorporate the most recent scientific evidence into their decision making, while maintaining the AI platform under physician supervision and control (Lennartz et al., 2021).

The loss of human interaction, and concern regarding the lack of empathy from AI platforms, along with the desire for patients to be informed when AI is used during their treatment, should emphasise the need for patients to be involved in the integration of AI into medicine. AI carries the risk of disrupting the patient-doctor relationship and there is also a need for medical professionals to be educated on AI literacy and emotional intelligence (Sauerbrei et al., 2023).

### ***Strengths and limitations***

Weaknesses of this study are the low response rate, that almost all participants were white, had completed third level education or above and were full-time employed. The respondents may not be fully representative of the general population who undergo fertility treatment. It has been shown previously that those with higher education status and of white ethnicity are more trustful of AI than those who are less educated and from black, Asian and minority ethnic (BAME) populations (Aggarwal et al., 2021; Yakar et al., 2022). Fewer men responded to our survey than women. As previously characterised by several groups, including our own, it can be particularly challenging to engage men in fertility research (Slauson-Blevins & Johnson, 2016). This survey was performed in a single location and, while offering important insights into patients perceptions of AI, may not be reflective of other populations and health-care settings.

The use of an open text qualitative approach has offered further insight into patients' perceived benefits and concerns with the use of AI. However, the use of focus groups or patient interviews would be more reliable to gather in-depth information, permit thematic analysis and gain greater insight into patient perceptions regarding AI use. Qualitative data results add nuance and depth to our quantitative results, as they are based on an individual's lived experience and give broader insight into how their emotions shape their responses to a topic. It is evident from the qualitative responses that whilst patients can envisage potential benefits with the use of AI, the lack of human interaction, oversight and empathy shape their concerns.

### ***Comparison with other studies***

In the general population, patients seem to agree that the use of AI in healthcare will lead to improvements. A UK-based survey of 408 patients investigated their perspectives on AI and machine learning and found that 87% supported the use of anonymised patient data to develop AI systems to improve outcomes. However, patients did have significant concerns regarding data security and privacy (Aggarwal et al., 2021). Trust in AI has also been shown to vary by speciality. In a large Dutch survey study of 1909 people on the use of AI in medicine, patients were found to have slightly more trust in AI used in dermatology as compared to radiology or surgery (Yakar et al., 2022). Within this study, overall people leaned towards a higher level of distrust of AI, however men were more trusting of AI as compared to women.

### ***Implications for clinical practise***

Successful implementation of AI into routine clinical practice depends not only on model optimisation and technical challenges therein, but also on patient trust and acceptance of AI (Aggarwal et al., 2021). Other areas of healthcare have reported some concern from patients on how AI may affect their relationship with clinicians (van der Zander et al., 2022), trustworthiness of AI advice and the current lack of regulatory oversight (Esmailzadeh, 2020; Scott et al., 2021). In ART, while current research is promising and suggests a potential advantage of integrating AI as a decision support tool to improve embryo selection and clinical pregnancy rates, patient perceptions regarding the use of AI within their fertility treatment has to date been largely unexplored. This study shows how patients are optimistic about possible benefits of AI, but they also have concerns regarding its effect on human interaction and lack of human oversight. These findings emphasise to healthcare providers the need for continued human oversight and patient interaction where AI platforms are introduced.

Our findings highlight that introduction of an AI platform into patient care must be done in an open and informative manner to patients. Patients should always be informed when AI platforms are used in their treatment and transparency when AI platforms make decisions should always be present.

Ethical concerns regarding AI are not unfounded. AI platforms are based on learned responses from existing data, and therefore the risk of bias exists. Patients from lower socioeconomic groups and those from minority groups will be less represented in the learned responses. This could lead to bias in AI platforms and the potential for certain groups to benefit more from AI use than others (Olawade et al.,

2025). The potential for data breaches or misuse of personal data is also an ethical concern that will need to be addressed for AI platform integration (Afnan et al., 2021) through regulation. Clinicians must be able to explain to patients why an AI platform has recommended a particular decision; lack of transparency can lead to distrust (GhoshRoy et al., 2023).

### **Implications for future research**

As further research is carried out using AI during fertility investigation and treatment, our findings provide compelling evidence that it will be important to actively involve patients when implementing AI in fertility treatment, and that patient information and education will be a valuable component of this.

Future studies should aim to capture a larger and more diverse population, in particular different ethnic backgrounds and varying education status, to gain insight on their perceptions of the use of AI. As AI becomes prevalent, not only within healthcare, future longitudinal studies can help to assess if patients' perceptions of AI evolve over time and how their experience with AI influences these perceptions.

Technology acceptance models have two main components: that the technology will be useful and that the technology will reduce effort (Yadegari et al., 2024). As shown in our results, patients do see AI in fertility being potentially of benefit for saving time and improving efficiency, however they have yet to see how the technology will be useful. Future research will therefore need to demonstrate the usefulness of AI within a fertility clinic, not only for overall clinical outcomes, but also how it can preserve time and resources.

### **Conclusion**

Overall, fertility patients have concerns regarding the introduction of AI into fertility care, with men more likely than women to be comfortable with AI performing embryo selection, semen analysis, sperm selection for ICSI and reporting an ultrasound.

### **Authors' contributions**

CRedit: **Niamh Fee:** Data curation, Formal analysis, Investigation, Methodology, Writing – original draft; **Louise E. Glover:** Formal analysis, Investigation, Methodology, Supervision, Writing – review & editing; **Renato Bauman:** Conceptualization, Supervision, Writing – review & editing; **David A. Crosby:** Methodology, Supervision, Writing – review & editing.

### **Disclosure statement**

N.F. has nothing to disclose. L.E.G. has nothing to disclose. R.B. has nothing to disclose. D.A.C. has nothing to disclose.

### **Funding**

No funding was received for this study.

### **Data availability statement**

Data regarding any of the subjects in the study has not been previously published unless specified. Data will be made available to the editors of the journal for review or query upon request.

### **References**

Afnan, M. A. M., Rudin, C., Conitzer, V., Savulescu, J., Mishra, A., Liu, Y., & Afnan, M. (2021). Ethical implementation of artificial intelligence to select embryos in in vitro fertilization. In AIES'21. *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society* (pp. 316–326). ACM. <https://doi.org/10.1145/3461702.3462589>

- Aggarwal, R., Farag, S., Martin, G., Ashrafian, H., & Darzi, A. (2021). Patient perceptions on data sharing and applying artificial intelligence to health care data: Cross-sectional survey. *Journal of Medical Internet Research*, 23(8), e26162. <https://doi.org/10.2196/26162>
- Alowais, S. A., Alghamdi, S. S., Alsuhbany, N., Alqahtani, T., Alshaya, A. I., Almohareb, S. N., Aldairem, A., Alrashed, M., Bin Saleh, K., Badreldin, H. A., Al Yami, M. S., Al Harbi, S., & Albekairy, A. M. (2023). Revolutionizing healthcare: The role of artificial intelligence in clinical practice. *BMC Medical Education*, 23(1), 689. <https://doi.org/10.1186/s12909-023-04698-z>
- Canon, C., Leibner, L., Fanton, M., Chang, Z., Suraj, V., Lee, J. A., Loewke, K., & Hoffman, D. (2024). Optimizing oocyte yield utilizing a machine learning model for dose and trigger decisions, a multi-center, prospective study. *Scientific Reports*, 14(1), 18721. <https://doi.org/10.1038/s41598-024-69165-1>
- Cherouveim, P., Velmahos, C., & Bormann, C. L. (2023). Artificial intelligence for sperm selection—a systematic review. *Fertility and Sterility*, 120(1), 24–31. <https://doi.org/10.1016/j.fertnstert.2023.05.157>
- Choi, B., Bosch, E., Lannon, B. M., Leveille, M. C., Wong, W. H., Leader, A., Pellicer, A., Penzias, A. S., & Yao, M. W. (2013). Personalized prediction of first-cycle in vitro fertilization success. *Fertility and Sterility*, 99(7), 1905–1911. <https://doi.org/10.1016/j.fertnstert.2013.02.016>
- Esmailzadeh, P. (2020). Use of AI-based tools for healthcare purposes: A survey study from consumers' perspectives. *BMC Medical Informatics and Decision Making*, 20(1), 170. <https://doi.org/10.1186/s12911-020-01191-1>
- GhoshRoy, D., Alvi, P. A., & Santosh, K. C. (2023). AI tools for assessing human fertility using risk factors: A state-of-the-art review. *Journal of Medical Systems*, 47(1), 91. <https://doi.org/10.1007/s10916-023-01983-8>
- Houri, O., Gil, Y., Danieli-Gruber, S., Shufaro, Y., Sapir, O., Hochberg, A., Ben-Haroush, A., & Wertheimer, A. (2023). Prediction of oocyte maturation rate in the GnRH antagonist flexible IVF protocol using a novel machine learning algorithm – A retrospective study. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, 284, 100–104. <https://doi.org/10.1016/j.ejogrb.2023.03.022>
- Illingworth, P. J., Venetis, C., Gardner, D. K., Nelson, S. M., Berntsen, J., Larman, M. G., Agresta, F., Ahitan, S., Ahlström, A., Cattrall, F., Cooke, S., Demmers, K., Gabrielsen, A., Hindkjær, J., Kelley, R. L., Knight, C., Lee, L., Lahoud, R., Mangat, M., ... Hardarson, T. (2024). Deep learning versus manual morphology-based embryo selection in IVF: A randomized, double-blind noninferiority trial. *Nature Medicine*, 30(11), 3114–3120. <https://doi.org/10.1038/s41591-024-03166-5>
- Kanakasabapathy, M. K., Thirumalaraju, P., Kandula, H., Kandula, T., Katkuri, A. V. R., Cipriano, C., Malmsten, J. E., Zaninovic, N., Bormann, C. L., & Shafiee, H. (2025). O-184 Variability in conventional AI models for embryo selection: Implications for stability and clinical reliability in AI-driven IVF. *Human Reproduction*, 40(Supplement\_1). <https://doi.org/10.1093/humrep/deaf097.184>
- Kim, H. M., Kang, H., Lee, C., Park, J. H., Chung, M. K., Kim, M., Kim, N. Y., & Lee, H. J. (2024). Evaluation of the clinical efficacy and trust in AI-assisted embryo ranking: Survey-based prospective study. *Journal of Medical Internet Research*, 26, e52637. <https://doi.org/10.2196/52637>
- Lennartz, S., Dratsch, T., Zopfs, D., Persigehl, T., Maintz, D., Große Hokamp, N., & Pinto Dos Santos, D. (2021). Use and control of artificial intelligence in patients across the medical workflow: Single-Center Questionnaire Study of Patient Perspectives. *Journal of Medical Internet Research*, 23(2), e24221. <https://doi.org/10.2196/24221>
- Letterie, G. (2023). Artificial intelligence and assisted reproductive technologies: 2023. Ready for prime time? Or not. *Fertility and Sterility*, 120(1), 32–37. <https://doi.org/10.1016/j.fertnstert.2023.05.146>
- Olawade, D. B., Teke, J., Adeleye, K. K., Weerasinghe, K., Maidoki, M., & Clement David-Olawade, A. (2025). Artificial intelligence in in-vitro fertilization (IVF): A new era of precision and personalization in fertility treatments. *Journal of Gynecology Obstetrics and Human Reproduction*, 54(3), 102903. <https://doi.org/10.1016/j.jogoh.2024.102903>
- Salih, M., Austin, C., Warty, R. R., Tiktin, C., Rolnik, D. L., Momeni, M., Rezatofghi, H., Reddy, S., Smith, V., Vollenhoven, B., & Horta, F. (2023). Embryo selection through artificial intelligence versus embryologists: A systematic review. *Human Reproduction Open*, 2023(3), ho031. <https://doi.org/10.1093/hropen/ho031>
- Sauerbrei, A., Kerasidou, A., Lucivero, F., & Hallowell, N. (2023). The impact of artificial intelligence on the person-centred, doctor-patient relationship: Some problems and solutions. *BMC Medical Informatics and Decision Making*, 23(1), 73. <https://doi.org/10.1186/s12911-023-02162-y>
- Scott, I. A., Carter, S. M., & Coiera, E. (2021). Exploring stakeholder attitudes towards AI in clinical practice. *BMJ Health & Care Informatics*, 28(1), e100450. <https://doi.org/10.1136/bmjhci-2021-100450>
- Slauson-Blevins, K., & Johnson, K. M. (2016). Doing gender, doing surveys? Women's gatekeeping and men's non-participation in multi-actor reproductive surveys. *Sociological Inquiry*, 86(3), 427–449. <https://doi.org/10.1111/soin.12122>
- van der Zander, Q. E. W., van der Ende-van Loon, M. C. M., Janssen, J. M. M., Winkens, B., van der Sommen, F., Masclee, A. A. M., & Schoon, E. J. (2022). Artificial intelligence in (gastrointestinal) healthcare: Patients' and physicians' perspectives. *Scientific Reports*, 12(1), 16779. <https://doi.org/10.1038/s41598-022-20958-2>
- Yadegari, M., Mohammadi, S., & Masoumi, A. H. (2024). Technology adoption: An analysis of the major models and theories. *Technology Analysis & Strategic Management*, 36(6), 1096–1110. <https://doi.org/10.1080/09537325.2022.2071255>
- Yakar, D., Ongena, Y. P., Kwee, T. C., & Haan, M. (2022). Do people favor artificial intelligence over physicians? A survey among the general population and their view on artificial intelligence in medicine. *Value in Health*, 25(3), 374–381. <https://doi.org/10.1016/j.jval.2021.09.004>