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Opinions of female academicians on oocyte freezing: a qualitative study

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SUMMARY

OBJECTIVE: The aim of this study was to evaluate the opinions of female academicians about oocyte freezing.

METHODS: This qualitative study included 12 single academic women who had not yet entered menopause, did not have children, and were continuing their doctoral education in Istanbul, Turkey, between August and September 2022. Data were collected with semi-structured interviews and evaluated by content analysis.

RESULTS: Three main themes were "Difficulty of fertility in academics," "Advantages of oocyte freezing," and "Concerns about oocyte freezing." Participants mostly had positive attitudes about the advantages of oocyte cryopreservation, but they had concerns about pregnancies obtained with frozen oocytes.

CONCLUSION: The academic women attributed fertility as an obstacle to their career and experienced anxiety about fertility. They were aware of the advantages of oocyte cryopreservation; however, they defined the pregnancy with oocyte freezing as artificial.

KEYWORDS: Oocyte. Cryopreservation. Fertility. University.

INTRODUCTION

Social oocyte freezing is the retrieval of oocytes followed by cryopreservation without a medical indication, only because of women's preference for postponing childbearing until later ages[1]. The optimum age for freezing is below 35 years, and the number and quality of oocytes, the used technique, and frozen periods may influence the success of pregnancy with cryopreservatived oocytes[1-3].

Women who prefer freezing eggs are commonly between 36 and 40 years of age, with higher education and professional employment[3,4]. Economic reasons and the challenging conditions brought by busy working life have striking effects on postponing fertility[5]. The most common reasons to delay fertility are associated with higher education, professional career, and financial independence[1].

Becoming an academician usually requires long years of professional education and work[6]. Despite the increase in the number of female academics over the years, motherhood continues to be an important task in their lives. However, many academic women feel that their productivity and success are negatively impacted. The unequal impact of parenthood in academia and the challenges faced by mother academicians are well established in the literature[6,7]. Oocyte cryopreservation can be an option for academic women to preserve their fertility potential until later ages.

No previous qualitative studies have been found on oocyte freezing in academic women. This study will contribute to the limited literature[6,8,9] on this issue with qualitative data. In addition, understanding the opinions of academic women with a high risk of age-related infertility, about their fertility intentions, desire for delaying birth, and oocyte freezing option, will guide health professionals in counseling those women to develop realistic expectations regarding the advantages and disadvantages of oocyte cryopreservation.

This study aimed to evaluate the opinions of female academicians about oocyte freezing.

METHODS

The sample consisted of 12 academic women who had not yet entered menopause, had no children, were married or single, and were continuing at least their doctoral education in Istanbul, Turkey, between August and September 2022. Participants were determined by purposive and snowball sampling methods. In qualitative studies, the interviews are continued until a saturation point when no new/different data are obtained from subsequent participants[10-12]. As no new themes were emerging from the interviews after 12 women, it was assumed that the data had reached a saturation point and the interviews were ended.

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The researchers contacted potential participants by telephone. Agreed participants completed a written informed consent form by the guidelines of the Declaration of Helsinki before the interview. Data were collected through online interviews using an introductory information form about personal characteristics and a semi-structured interview form. Participants consented to audio/video recording. The semi-structured interview form included six questions (Table 1). The interviews lasted approximately 20 min.

Two researchers conducted the interviews, of them one asked the questions and the other reported the interview. The data were collected under subheadings by transcribing the most common and different points. Researchers evaluated the documents, which were summarized by the content analysis method, and transformed them into a written report. The data were coded line by line by the researchers and subjected to content analysis. The themes and sub-themes were then finalized after the researchers came together, re-evaluated, and reached a common opinion. In order to ensure the validity and reliability of the research, the percentage of consistency between the codes and themes determined by three researchers was calculated. The value of 0.85 was evident that the categories were consistent[12].

Ethical aspects: The ethics committee decision (Date: 28.06.2022/Decision No: 584) was obtained from the Medipol University Non-Interventional Clinical Research Ethics Committee for the research.

Findings

The participants were between 26 and 37 years of age (mean age 31.25±3.95 years), all of them were single, 83.3% of them had an income equal to their expenses, and 58.3% of them had information about egg freezing (Table 2). Participants gave an average answer of 7.08±1.62 out of 10 on the importance of having a child and 41.17±2.88 on the average for the age limit for natural conception.

In line with the interviews, three main themes, one subtheme, and 29 codes were determined as "Difficulty of fertility in academicians," "Advantages of oocyte freezing," and "Concerns about oocyte freezing" (Table 3).

Central Theme 1: Difficulty of fertility in academics: Ten codes were found (Table 3). Most participants stated that it is challenging to be a mother in academics and that would cause them to pause and work with lower productivity.

Participant 2 (aged 27 years): "Academics differ from other professions to a certain extent. We must constantly improve ourselves; of course, we can spare less time for home life than other professional groups. At this point, of course, the childbearing age may be delayed. The time allocated for children may decrease. Academics can be a disadvantage in terms of childbearing."

Participant 7 (aged 37 years): "It will affect the time of having children in academics because it is unrealistic to have children at this intensity anyway. However, this is my preference; other people do this, and they have children well. I preferred not to have them all on top of each other like this, but to spend that process by enjoying the child more, you know, not to have a child in the stress of doctoral education."

Central Theme 2: Advantages of oocyte freezing: Nine codes were found (Table 3). Most participants stated that they had a positive attitude toward the advantages of oocyte cryopreservation.

Participant 5 (aged 27 years): "Because the risk of childbirth increases with age. Naturally, if it is a method that reduces its effects, I would consider egg freezing from that point of view because I think freezing an egg that is fertile at the moment. I mean, also think about it to reduce the psychological pressure on me right now, the pressure of society, to say that I have already taken precautions."

Participant 6 (aged 27 years): "As a woman, we can all experience uneasiness from time to time due to the biological clock or the early menopause stories we see around us. If I have frozen eggs, I feel more secure, and I can make the decision of motherhood entirely according to my own life, and I am not interested in the biological clock."

Central Theme 3: Concerns about oocyte freezing: Ten codes were found (Table 3). Participants' concerns about oocyte freezing were generally about pregnancies obtained with frozen oocytes. The statements of a few participants are shared:

Table 1. Semi-structured ınterview questions.

1. How do you think your academic career plan will affect the decision/timing of having children in the future? Explain your reasons.
2. Would you consider freezing your eggs or embryos to postpone having children?
3. How would it make you feel if you froze your eggs?
4. Do you have any concerns about your future pregnancy with your frozen eggs/embryos? What about (advanced-age pregnancy, complications, etc.)?
5. If you do not need to use your frozen eggs/embryos in the future, what would you prefer to do with them? Why? (Destroyed/donated to those in need/donated for research.)
6. What do you think about the financing of egg freezing, and who do you think should provide it?

Table 2. Descriptive characteristics of the participants.

Participant	Age (years)	Profession	Title	Partner presence	Thinking about having children in the future	Importance of having children
K1	34	Psychology	Research Assistant/Instr.	No	I think	7
K2	27	Social Service	Research Assistant/Instr.	Yes	Undecided	6
K3	30	Child Development	Research Assistant/Instr.	Yes	I think	9
K4	26	Speech and Language Therapy	Research Assistant/Instr.	No	Undecided	10
K5	27	Speech and Language Therapy	Research Assistant/Instr.	Yes	I think	5
K6	27	Logistics	Research Assistant/Instr.	Yes	I think	6
K7	37	Nurse	Research Assistant/Instr.	Yes	Undecided	6
K8	36	Business	Prof. Dr. Lecturer	No	I think	5
K9	31	Electronic engineering.	Research Assistant/Instr.	No	I think	8
K10	33	Tourism	Research Assistant/Instr.	No	I think	7
K11	36	Nurse	Prof. Dr. Lecturer	Yes	I think	7
K12	31	Biochemistry	Prof. Dr. Lecturer	No	I think	9

Instr.: instructor.

Participant 11 (aged 36 years): "After all, it is not spontaneous; it feels like something artificial in a laboratory environment. So maybe I would be a little worried."

Participant 3 (aged 30 years): "After a certain age, I may not be able to achieve a healthy enough level to raise a living creature in it, when biologically my body is barely enough to even for me. For this reason, I have concerns."

DISCUSSION

Being a mother was highly important for most of the participants, and they were planning to become parents in the future. No matter how educated a woman is, her internalization of society's norms causes her to see herself as an "incomplete woman" when she is not fertile. In a previous qualitative study in Turkey, it was emphasized that women with higher education froze oocytes to meet social norms[13].

Gaining a professional career usually takes place during women's most fertile years, when women may need to postpone fertility. Fertility is interpreted as a significant detriment to the professional development of academic women because of the necessity of advancement in academic life, the need to work outside working hours, and the patriarchal social culture. The lack of childcare facilities in the workplace is another reason why women delay childbearing. In studies with women academics, women have reported difficulties balancing childcare with their academic careers[7,14]. Women generally have more childcare responsibilities than men and are therefore less likely to meet the idealistic view of academics[6]. Balancing research and other responsibilities in academia with motherhood can be difficult. Being a mother is scary for a woman who is caught between two dilemmas[7,15].

The women in this study described motherhood as a pause or loss in their career plans. Most of the participants were at the beginning of their careers and were younger. They may therefore have been less eager to become mothers. A small number of female academics in this study said that fertility was not a barrier to their career. However, these women had advanced in their careers. Therefore, they may have been more interested in becoming a mother and said it was not an obstacle in their career. In a study of highly educated women, half of the participants reported that they were concerned about their future fertility[16]. Oocyte cryopreservation can improve women's reproductive autonomy or be a chosen strategy against age-related infertility[1,17].

In a study of women who froze oocytes, a high proportion (88%) of women cited lack of a partner as a reason, while very

Table 3. Analysis of central themes and codes.

	Codes	n
Central Theme 1. The difficulty of fertility in academia	In between	2
	Engel	1
	Pause	1
	Disappear	1
	Difficult	2
	Reducing productivity	1
	Harmful	1
	Disadvantage	1
	Postpone	1
	Not a barrier	3
Central Theme 2. Advantages of oocyte cryopreservation	No information	4
	Reliable	1
	Guaranteeing	1
	Healthy	3
	Precaution	1
	Happy	1
	Trust	5
	At ease	3
	Guarantee	1
Central Theme 3: Concerns about oocyte cryopreservation	Unnatural	1
	Expensive	1
	Moving away from feminine energy	1
	Concern	1
Central Theme: Concerns about the upcoming pregnancy	Concern	8
	Artificial	1
	Anxiety	1
	Guilt	1
	On Trial	1
	I am not pessimistic	1
	I relax	2

few (19%) women cited a demanding work schedule at work[4]. Many educated women are willing to postpone fertility and opt for oocyte freezing in order to find the right partner to share their lives with[18]. However, half of the women in this study had a partner, but they mostly had planned to postpone fertility. We cannot say that this plan was due to the absence of a partner in academics.

Although women said they would consider oocyte cryopreservation, many of them said they might be worried about pregnancy with frozen oocytes. The thought of this pregnancy being artificial made them uneasy. They even felt that they would be distancing themselves from feminine energy. However, the current literature emphasizes that pregnancies with vitrified oocytes are mostly safe[18,19]. Due to the novelty of the oocyte cryopreservation procedure in Turkey, many women have inadequate knowledge about the safety of the procedure, including the possible complications of pregnancy at an advanced age. In a previous study of undergraduate students in Turkey, female students were more likely to say that they would consider freezing their oocytes if it was medically necessary[20].

Social oocyte cryopreservation is privately funded in Turkey, as in many countries worldwide[7]. Participants in this study were also undecided because of the high cost of freezing, and about half of the participants said that the financing should be within the government. More women would be able to consider oocyte cryopreservation with government funding.

In conclusion, the academic women attributed fertility as an obstacle to their career. They valued the advantages of oocyte cryopreservation; however, they had concerns about pregnancy with frozen oocytes. The fertility intentions of women at high risk of age-related infertility, such as academics, should be questioned, and if interested, they should be counseled about the advantages and disadvantages of oocyte freezing.

Strengths of the study

This study provides in-depth qualitative data to the limited literature about academicians' views on oocyte freezing, with high consistency between the themes determined by researchers. The study was carried out in Istanbul, where the number of female academicians observing the effects of parenting in academia is high.

Limitations

The participants were mostly doctoral research assistants in their early 30s, the most suitable group for oocyte freezing. The results do not reflect the academicians with higher degrees. In addition, the use of the purposive sampling method may be a limitation.

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AUTHORS' CONTRIBUTIONS

ÖT: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **GK:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **İGS:** Conceptualization, Formal Analysis, Methodology, Supervision, Writing – review & editing.

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