



Call for Enhancing Women's Intention Toward Oocyte Cryopreservation at Beni-Suef University

Noha Hassan Abd-Elfattah¹, Aya Shehata Abd-Elfattah Mohamed² and Hanan Elzeblawy Hassan^{3*}

¹Assistant Professor of Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt

²Demonstrator of Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt

³Professor of Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt



Abstract

Background: A rapid uptick in the use of vitrification was observed not only in patients facing oncological treatments but also among patients with other medical conditions. The adoption of cryopreservation soon followed, with a widespread availability of cryopreserved oocytes.

Aim: The current study was conducted to evaluate the effect of an educational program on females' enhancing intention toward oocyte cryopreservation at Beni-Suef University.

Subjects and Methods:

Design: A quasi-experimental design was used.

Sample and Settings: A study from Beni-Suef University on a purposive sample consisted of 334 working females at Beni-Suef University.

Tools: Tool (I): An Arabic-structured interview questionnaire sheet: It consists of two parts: Part (A): Females' sociodemographic data. Part (B): Females' background regarding oocyte cryopreservation. Tool (II): Females' intention regarding oocyte cryopreservation.

Results: It reveals that 62.9% had no background on oocyte cryopreservation, 48.8% of the studied females had insufficient income, 86.5% had moderate intentions as compared to only 1.5% having high intentions level pre-program.

Conclusion: Based on the findings of the present study, it can be concluded that progression in intention level for females who had more background regarding oocyte cryopreservation than others who had no background.

Recommendations: Establishing a health educational program for oocyte/ova cryopreservation technology for nursing students to enhance their intention as they act as counselors and educators.

Keywords: Women's Intention; Oocyte Cryopreservation

Introduction

A new clinical discipline called "fertility preservation" has been created to keep young adult females who are at risk of infertility from losing their capacity to procreate [1]. In addition to surgical advancements, innovations in cryopreservation techniques and assisted reproductive technologies have caused the area to grow quickly [2-7]. Young females who risk losing their capacity to conceive due to illnesses, medical issues, or treatments should be especially concerned about their fertility preservation potential [8-13].

The decision to freeze eggs is challenging. Outcomes for oocyte cryopreservation are uncertain and vary between providers, and success declines with age at freezing. Additionally, OC is costly, with doctors frequently advising more than one cycle to gather enough eggs to increase the likelihood of a live birth. Cost is frequently a deterrent to use [14].

The quality and objectivity of the information on the websites of fertility clinics have also come under fire. Nevertheless, the media's access to information is usually restricted. Women who had previously frozen their eggs have further expressed that their primary objective is to have a complete EOC martial that focuses exclusively on women [15].

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*Correspondence:

Dr. Hanan Elzeblawy Hassan, Ph.D.,
Professor of Maternal and Newborn
Health Nursing, Faculty of Nursing,
Beni-Suef University, Egypt, Tel:
01272808058;

E-mail: nona_nano_1712@yahoo.com/

ORCID: <https://orcid.org/0000-0002-9308-3081>

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According to several research studies, non-medical OC may also give a female more time to find a suitable partner, more time to complete education, and/or more time to mature and develop a career and financial security before embarking on parenthood [16]. Epidemiological studies have further shown that females who choose this method are occupationally successful, financially independent, and more educated [17]. The process of female fertility decline is believed to occur over the course of her lifetime, beginning with a slight decrease after the age of 32 years and becoming more evident after the age of 37 years [18].

The best timing for females to consider SOC is 31-35 years because it is after the 20s when they still have time to find a suitable partner and before the time of actual age-related fertility decline [19]. Thus, many recommended cryopreserving oocytes before the 35-year-of-age cut-off for advanced maternal age and an age that is associated with an increased rate of fertility decline [20].

Nurses play an integral role in education, counseling, coordination of care, support, advocacy, and research in settings in which women seek care for fertility [21-24]. It is important for nurses who provide care to women in primary care, oncology, and reproductive health care settings to stay current on issues related to fertility and fertility preservation [25-27]. Therefore, in order to give appropriate counseling, particularly for single women, it is crucial to determine the knowledge, attitudes, and beliefs of women that influence their decision-making about fertility preservation. Thus, it's critical to start learning about fertility preservation at a young age [28].

Aim of the Study

The current study was conducted to evaluate the effect of an educational program on females' enhancing intention toward oocyte cryopreservation at Beni-Suef University.

Subject and Method

Research design: Quasi-experimental research design (pre/post-test) was utilized to achieve the aim of the current study.

Subjects and Settings: A study from Beni-Suef University on a purposive sample consisted of 334 working females at Beni-Suef University.

Tools of data collection:

Tool (I): An Arabic-structured interview questionnaire sheet: It consists of two parts:

Part (A): Females' sociodemographic data. The researcher developed a study focusing on female socio-demographic characteristics, including age, education, marital status, occupation, residence, income, and delayed marriage or childbearing to gather data from subjects, after reviewing literature.

Part (B): Females' background regarding oocyte cryopreservation. This part was concerned with females' background on oocyte cryopreservation (OC)

Tool (II): Females' intention regarding oocyte cryopreservation: The researcher assessed females' intentions regarding ovarian freezing using a seven-item Likert scale. The responses were divided into high, moderate, and low intention categories. The scale included factors like social acceptance, fear of future husband refusal, lack of knowledge, and feelings of shame. The results showed varying levels of agreement on the decision. The total intention score was calculated

and divided into three categories: High intention: for scores of $\geq 75\%$, Moderate intention: for scores of $50\% - < 75\%$, and Low intention: for scores of $< 50\%$.

Tools Validity and Reliability: The study tools' content validity was assessed by a panel of experts for comprehensiveness, accuracy, relevance, applicability, and linguistic clarity. Tool reliability was measured for stability and consistency over time, with a Cronbach's Alpha test indicating a reliability coefficient of 0.774.

Fieldwork: The study aimed to develop an educational program on oocyte cryopreservation among females at Beni-Suef University. The operational design involved three phases: preparatory, pilot study, and fieldwork. The preparatory phase involved reviewing literature and developing data collection tools, while the pilot study evaluated their applicability and efficiency. Fieldwork was conducted over six months, with pre-test data serving as the baseline for the educational program. The program was implemented at Beni-Suef University faculties, with four interactive sessions held twice weekly. The post-test evaluated the effect of the educational program sessions using the same tools used during the assessment phase.

Statistical Design: The study developed an educational program on oocyte cryopreservation for females at Beni-Suef University, involving preparatory, pilot study, and fieldwork. The program was implemented with interactive sessions, and post-test evaluations evaluated the program's effectiveness.

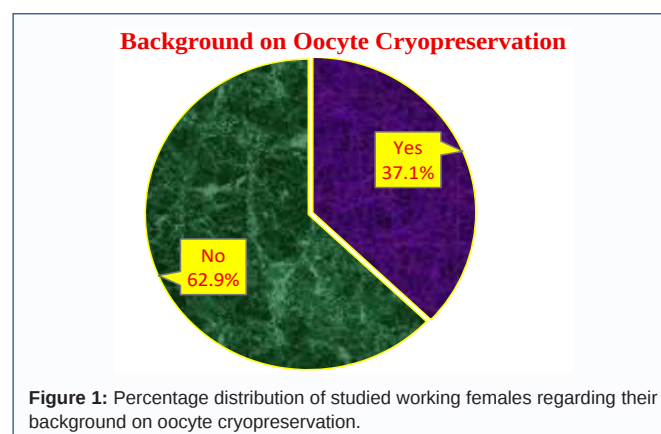
Results

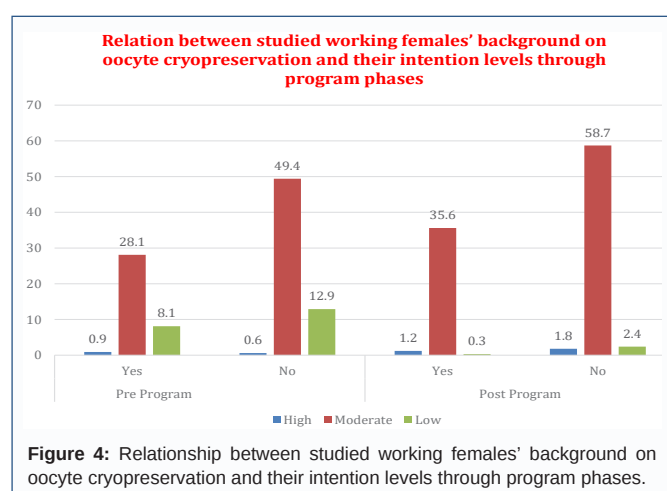
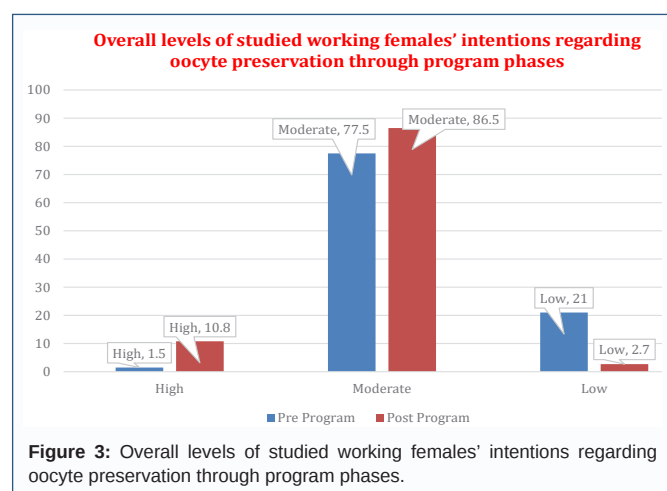
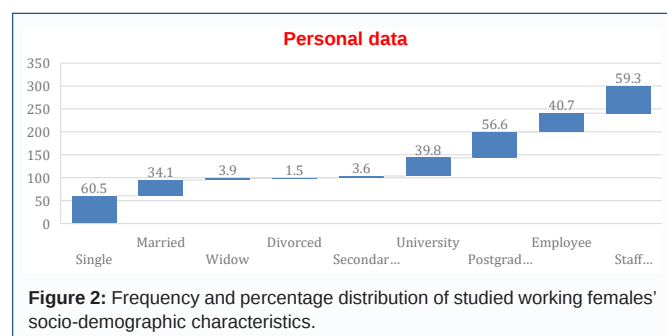
Figure 1 displays the distribution of studied working females regarding their background on oocyte cryopreservation. It reveals that nearly two thirds of them (62.9%) had no background on oocyte cryopreservation.

Figure 2 Summarizes the distribution of studied working females' socio-demographic characteristics. Concerning their monthly income from their point of view, results revealed that 48.8% of the studied females had insufficient income. For their residence, 59.3% were rural residents.

Figure 3 demonstrates the overall levels of studied working females' intentions regarding oocyte preservation through program phases. It describes that the majority of studied working females (86.5%) had moderate intentions as compared to only (1.5%) of them having high intentions level pre-program.

Figure 4 shows the relationship between studied working females' background on oocyte cryopreservation and their intention





levels through program phases. It proves progression in intention for females who had background regarding oocyte cryopreservation more than others who had no background.

Discussion

Oocyte cryopreservation technology currently allows women to freeze and preserve oocytes, offering a realistic chance of future pregnancy with in vitro fertilization (IVF) comparable to those achieved with fresh oocytes. The procedure involves hormonal stimulation, trans-abdominal or trans-vaginal retrieval of oocytes from the ovaries, oocyte freezing by vitrification or slow freezing approaches, and storage at -196°C for an extended period [29].

The freezing process halts oocyte aging, allowing women to

conceive at a later date. Initially, OC was developed as a fertility-sparing option for young females at risk of becoming infertile from medical treatments such as chemotherapy or from illnesses like early ovarian failure, referred to as “medical” OC. However, OC, also known as “non-medical,” has recently emerged as a viable option for females who are choosing to delay childbearing for personal reasons such as career pursuits, educational advancement, lifestyle, lack of a partner, or financial security [30].

Concerning the overall intention levels of working females regarding OC, the results of the current study revealed that the majority of studied working females had moderate intentions which is higher as compared to more than three quarters who had moderate intentions pre-program. The females' intention to undergo oocyte cryopreservation improvement after program implementation, may be attributed to lectures, and instructional strategies. The use of clear language aligns with Edgar Dale's Pyramid of Learning, emphasizing that discussions and audiovisual aids enhance retention rates [31-50].

This finding came in agreement with Sousa-Leite et al. (2019), who assessed “Women's attitudes and beliefs about using fertility preservation to prevent age-related fertility decline-A two-year follow-up,” declared that only 14% reached a decision and almost decided not to do FP, and found that women's intentions, desire, and number of children wanted decreased, and a low number of women progressed through the stages of the decision-making process [51].

In the same line, the finding came in accordance with Lee et al. (2024), whose study, “Predicting factors for social oocyte cryopreservation intention among unmarried Korean women,” illustrated that about three-fifths of the study subjects had low intention levels regarding oocyte cryopreservation [52].

On the contrary, the study findings contrast with a study conducted by Kim et al. (2022), entitled “Awareness, intentions, and attitudes towards planned oocyte cryopreservation among female medical staff,” which announced that there was considerable public interest in FP and an increasing number of women seeking to safeguard themselves against age-related infertility [53]. Additionally, a study was carried out by EL-Adham & Shaban (2023) and Araby et al. (2025) in Egypt [54-55]. They declared that the majority of the studied unmarried females had a high intention level post-program implementation.

The study found no significant relationship between working females' intention levels and socio-demographic characteristics before and after program implementation, consistent with previous research by EL-Adham & Shaban (2023) [54]. This may be due to challenges that might affect females' intentions regarding OC. Moreover, Jennings et al.'s 2013 study contradicts the current study's findings, as it recruited diverse ethnic females who believed FP technology violated God's will and was ethically forbidden [56]. The variance in the results could be attributed to diverse sample subjects.

Conclusion

Based on the findings of the present study, it can be concluded that progression in intention level for females who had more background regarding oocyte cryopreservation than others who had no background.

Recommendation

Establishing a health educational program for oocyte/ova

cryopreservation technology for nursing students to enhance their intention as they act as counselors and educators.

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