International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding the Cryopreservation of Ovum Among Nursing Students in T. John School and College of Nursing at Bangalore.

Mrs. Kalaima

Professor, T. John College of Nursing, Bangalore

1. Abstract

Background: Ovum cryopreservation has transitioned from an experimental milestone in 1986 to a fundamental component of modern reproductive medicine. This study evaluated the efficacy of a Structured Teaching Programme (STP) in enhancing the knowledge of nursing students regarding this technology. **Methods:** A pre-experimental, two-group pre-test/post-test design was utilized with 100 final-year nursing students at T. John College and School of Nursing, Bangalore. Knowledge was assessed via a validated structured questionnaire. **Results:** Initial assessments revealed that 97% of participants possessed inadequate knowledge. Following the intervention, 68% achieved adequate knowledge levels, and 32% reached moderate levels. The mean score increased from 4.6 to 16.24 (), indicating a statistically significant improvement. **Conclusion:** The Structured Teaching Programme is a highly effective modality for educating future healthcare professionals on advanced fertility preservation techniques.

Keywords: Oocyte Cryopreservation, Nursing Education, Structured Teaching, Fertility Preservation, Bangalore.

2. INTRODUCTION

The adage, *"Preserving an ovum today is preserving a possibility for tomorrow,"* encapsulates the transformative power of oocyte cryopreservation. As a cornerstone of fertility research, this technology empowers women to safeguard their reproductive potential against the natural decline of biological clocks or medical interventions.

Historically, the field moved from slow-freezing methods—which were often compromised by lethal ice crystal formation—to modern vitrification. While early pregnancy rates were lower than 15%, contemporary vitrification protocols now yield clinical pregnancy rates between 45% and 55%. Despite these gains, challenges such as cryoinjury (5–10% failure) and fertilization hurdles remain.

In the Indian context, the demand for "social egg freezing" is rising as more women delay childbearing for professional or personal reasons. With female fertility declining sharply after age 32 and aneuploidy rates rising significantly after age 35, the need for informed healthcare providers is critical. This study

aims to address the knowledge gap among nursing students, who serve as frontline educators in clinical settings.

3. Methodology

- **Research Design:** A pre-experimental, two-group (pre and post-test) evaluative approach was adopted.
- **Setting and Sample:** 100 final-year nursing students (B.Sc. and GNM) from T. John College of Nursing, Bangalore, were selected using a convenient sampling technique.
- **Instrumentation:** A structured knowledge questionnaire was developed and validated by nursing experts. Reliability was established using the Karl Pearson formula, indicating high internal consistency.
- **Intervention:** A Structured Teaching Programme (STP) covering the history, indications, procedure, and ethical considerations of ovum cryopreservation was administered.

4. Results and Discussion

4.1 Knowledge Assessment

The pre-test data highlighted a significant deficit in baseline understanding:

- **Inadequate Knowledge:** 97% of students.
- **Moderate Knowledge:** 3% of students.
- **Adequate Knowledge:** 0%.

Post-intervention results demonstrated a total shift in competency:

- **Adequate Knowledge:** 68% of students.
- **Moderate Knowledge:** 32%.
- **Inadequate Knowledge:** 0%.

4.2 Effectiveness of the STP

The statistical analysis confirmed the hypothesis that the teaching programme would significantly raise knowledge scores.

Mean, SD and t value of Pre-test and Post-test Knowledge score of nursing students by using Paired‘t’ test.

GROUP Nursing student	Mean	SD	Mean Difference	df	Paired ‘t’ value	P value
Pre test	4.6	1.16	11.64	98	34.1	<0.001 **S**
Post test	16.24	2.56				

*** Significant at 0.001 level.**

The data presented in table 2 shows that mean pretest knowledge of the nursing students was 4.6 and mean post-test knowledge was 16.24 and calculated ‘t’ value 34.1 was greater than the table value at 0.001 level of significance. Hence the H_1 is accepted. Therefore, it is concluded that there was significant gain in knowledge regarding cryopreservation of ovum among nursing students after structure teaching programme.

4.3 Demographic Associations

Using Chi-square analysis, the study found a significant association () between pre-test knowledge scores and two specific variables: **Residence** and **Annual Family Income**. No significant association was found with age, gender, or previous exposure to the topic.

5. Nursing Implications and Recommendations

Nursing Education & Practice: The study suggests that STP should be integrated into nursing curricula to prepare students for the evolving landscape of reproductive technology. Nurses must be equipped to offer "incidental teaching" and use mass media or visual aids (flashcards, charts) to educate the public on fertility preservation.

Nursing Research: Further research should focus on the long-term ethical implications and cost-effectiveness of these technologies in various socio-economic settings in India.

Limitations: The study was limited by its small sample size (N=100) and the lack of a control group, which limits the generalization of findings to the broader nursing population.

6. Conclusion

The findings clearly indicate that structured educational interventions significantly bridge the knowledge gap regarding ovum cryopreservation among nursing students. As reproductive autonomy becomes a central theme in women's health, such educational initiatives are vital for fostering a competent healthcare workforce.

References

1. Nair AK, Shetty N, Manjunath BS. Successful birth of the first frozen oocyte baby in India. J Hum Reprod Sci. 2008;1(2):71-75. doi:10.4103/0974-1208.43189.
2. Pai HD. Oocyte Cryopreservation - Current Scenario and Future Perspectives. J Hum Reprod Sci. 2021;14(4):249-256.
3. Potdar N, Gelbaya TA, Nardo LG. Systematic review and meta-analysis of clinical outcomes of vitrified oocytes in IVF. Fertil Steril. 2014;102(4):922-930.
4. Cobo A, Kuwayama M, Perez S, et al. Comparison of fresh and vitrified oocytes in IVF: Fertilization and pregnancy outcomes. Reprod Biomed Online. 2010;20(2):179-186.
5. Gupta N, Roy KK, Wadhwa L, et al. Oocyte cryopreservation: A clinical update. J Hum Reprod Sci. 2016;9(3):117-123.
6. Potdar N, Nardo LG, Gelbaya TA. Cryopreservation of oocytes: A clinical update. J Hum Reprod Sci. 2017;10(1):1-10.
7. Jain D, Singh S, Aggarwal N. Efficacy of oocyte vitrification in Indian women: A retrospective study. Indian J Med Res. 2017;145(2):190-196.