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The Relationship between the Level of Knowledge Regarding Human Egg Preservation and Age among Female Lectures in Enugu State Universities

Sylvester O Nweze[1], Ifeoma Loveth Iheanacho[2], Emmanuel Ikechukwu Okolie[3*]

[1,3] Department of Obstetrics and Gynaecology, Enugu State University of Science and Technology (ESUT) Teaching Hospital, Parklane, Enugu State, Nigeria.

[2] Department of Human Kinetics and Health Education, Enugu State University of Science and Technology, Enugu State, Nigeria.

ABSTRACT

Background: As a woman ages, the quantity and quality of her eggs naturally decline. This can adversely affect her fertility as well as the success rate of egg preservation.

Objectives: This paper examined the relationship between age and levels of knowledge of female lecturers in universities in Enugu state, regarding egg preservation and the nature of human oocyte.

Materials and Methods: The descriptive survey design was adopted. Participants consisted of female lecturers who were selected using purposive and accidental sampling technique. The study utilised a self structured questionnaire whose reliability was established through KR_{20} reliability procedure with a reliability coefficient of 0.78. Four hypotheses where formulated to guide the study. The questionnaire was administered to two hundred (200) female lecturers of which one hundred and seventy one (171) was returned in usable condition and used for the study.

Results: The result showed that age has a significant influence on level of knowledge of egg preservation, reason for egg preservation, the procedure for egg preservation and the nature of human oocyte among female lecturers in universities within Enugu state.

Conclusion: It was concluded in the study that age influences the knowledge of nature of human oocyte, egg preservation, reasons for egg preservation and procedure involved in egg preservation.

ARTICLE DETAILS

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INTRODUCTION

Even though the population of women between the ages of 36 to 44 who are trying to conceive has increased, it is almost common knowlege that female reproduction ability declines in their 40s due to changes in the quality and quantity of their eggs as a result of age [1]. Egg preservation is a fertility treatment in which a woman's mature eggs are harvested from her ovaries and preserved for later use when she is ready to become pregnant [2]. It is a vital branch of reproductive science and involves the safeguarding of oocytes for use in assisted reproduction techniques (ART) [3]. This procedure has been used to enable women postpone pregnancy to a later date either for medical reasons such as cancer treatment or for social reasons such as employment or studying [2].

The major reasons why women engage in egg preservation are for educational advancement and profession planning. Studies have shown that there has been an increase in fertility preservation for the purposes of deferring childbearing, especially among women in time-intensive professions [4]. Egg preservation has also been touted as a way to provide women who are still fertile with insurance against their biological clock such that women in their twenties or early thirties will be able to devote themselves to career without losing reproductive potency and by freezing eggs, they will still have healthy eggs available for when they are ready to start a family [5]. Consequently, egg preservation can give an aged woman the opportunity to birth a child even in late 60's, hence; older female lecturers could as well benefit from egg preservation. Chronopoulou et al., confirmed that this sense of reproductive security could push the limits of childbearing age and could result in pregnancies not only in the 40s or early 50s but also in the 60s [6].

To ensure the greatest fertility, it would be best for women to freeze their eggs in their early or late 20s as at this point many

women but not all would usually have completed their education and started on a career [7]. Additionally, the authors noted that if the women have not yet had children, and have no partner or immediate plans to do so, banking eggs would appear to enable them to live their lives without the biologic clock ticking so loudly in their ears, thereby encourage more women into academia space [7]. This may provide some women with reassurance that they can commit themselves to education and work without losing their fertility [8]. As a result, the European Society of Human Reproduction and Embryology recommends that egg preservation should be available for those who want to protect their reproductive potential against the threat of time and age [9].

Female lecturers in universities in Enugu state numbered about 31% of the total number of lecturers in universities in Enugu state. To bring about a balance to the above development, female lecturers can opt for egg preservation at a younger age in order to protect their fertility while advancing their education and career so as to be able to go for childbirth when they are geared up for procreation. Ikhena-Abel et al., concluded that many women will find egg preservation empowering beyond matters of education and the workplace as it can help in child spacing and health of the female lecturer [10].

The problem lies in the lack of awareness and understanding among individuals about the impact of age on fertility, as well as the availability of the option to preserve their fertility via egg freezing. Hence, this study was to find out the knowledge level of the nature of human oocytes and egg preservation among young and older female lecturers in universities in Enugu state. For this study the age will be grouped into younger female lecturers (25-45 years) and older female lectures (46 and above).

HYPOTHESES

Based on the problem of the study, the following hypotheses were formulated and tested in the study.

$H0_1$: There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of nature of human oocyte

$H0_2$There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of egg preservation.

$H0_3$There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of reasons for egg preservation.

$H0_4$: There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of procedures for egg preservation

METHODOLOGY

A descriptive survey design was used for this study. The population was made up of all the female lecturers in universities in Enugu state. There were 398 female lecturers in these universities in 2021/2022 academic year according to the official records of the Academic Planning Departments of the respective universities in Enugu State. The sample size used was 200 female lecturers, which was arrived at using Yamane's formula. However, 171 properly filled and returned questionnaire was finally used for the study. The researchers adopted multi stage, purposive and accidental sampling techniques. Chi square analysis was used to test the hypotheses formulated at 0.05 level of significance.

RESULT

$H0_1$: There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of nature of human oocyte

Table 1: Chi square analysis of the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of nature of human oocyte

Variables	TRUE Response	FALSE Response	N	Chi-sq	Df	P-value	Dec.
Younger (25-45 Years)	66 (93%)	5 (7%)	71	7.254	1	0.007	Rejected
Older (46yrs and above)	100 (100%)	0 (0%)	100				

Key: N = number of female lecturers, Chi-squ = Chi square, DF = degree of freedom, p-value = probability value, Dec = decision

Table 1 shows that the chi-square calculated value of 7.254, is significant at 0.007 level of significance, which is less than 0.05 level of significance set for the study. Therefore, the null hypothesis is rejected as stated. This means that there is a significant association between the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of the nature of human oocyte.

$H0_2$: There is no significant association between age of female lecturers in universities in Enugu State and their level of knowledge of egg preservation

Table 2: Chi square analysis of the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of egg preservation

Variables	TRUE Response	FALSE Response	N	Chi-sq	Df	P-value	Dec.
Younger (25-45 Years)	56 (78.9%)	15 (21.1%)	71	7.391	1	0.007	Rejected
Older (46yrs and above)	93 (93%)	7 (7%)	100				

Table 2 shows that the chi-square calculated value of 7.391, which is significant at 0.007 level of significance. Therefore, the null hypothesis is rejected as stated. This means that there is a significant association between the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of egg preservation.

$H0_3$: There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of reasons for egg preservation

Table 3: Chi square analysis of the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of the reasons for egg preservation

Variables	TRUE Response	FALSE Response	N	Chi-sq	Df	P-value	Dec.
Younger (25-45 Years)	55 (77.5%)	16 (22.5%)	71	6.094	1	0.014	Rejected
Older (46yrs and above)	91 (91%)	9 (9%)	100				

Table 3 shows that the chi-square calculated value of 6.094 is significant at 0.014 level of significance, which is less than 0.05 level of significance set for the study. Therefore, the null hypothesis is rejected as stated. This means that there is a significant association between the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of reasons for egg preservation.

$H0_4$: There is no significant association between age of female lecturers in universities in Enugu State and the level of knowledge of procedures for egg preservation

Table 4: Chi square analysis of the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of procedures for egg preservation

Variables	TRUE Response	FALSE Response	N	Chi-sq	Df	P-value	Dec.
Younger (25-45 Years)	59 (83.1%)	12 (16.9%)	71	4.121	1	0.042	Rejected
Older (46yrs and above)	93 (93%)	7 (7%)	100				

Table 4 shows that the chi-square calculated value of 4.121 is significant at 0.042 level of significance, which is less than 0.05 level of significance set for the study. Therefore, the null hypothesis is rejected as stated. This means that there is a significant association between the responses of younger and older female lecturers in universities in Enugu State and the level of knowledge of procedures for egg preservation.

DISCUSSIONS

The finding that there is a significant difference between the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of nature of human oocyte reveals that age has an influence on female lecturers being knowledgeable about the nature of human oocyte. The study also found that there is a significant difference between the responses of younger and older female lecturers in universities in Enugu State on the level of knowledge of egg preservation. The above findings are in line with previous findings which shared that there is a considerable gap in women's knowledge about female reproduction and reproductive outcomes, especially for those with advanced maternal age [11-13]. As well as this, O'Brien

et al., similarly found that a majority of study participants believed that it is a woman's right to postpone pregnancy for social reasons and to freeze her eggs, with a significant difference in options noted between younger and older women [14].

The above findings could be as a result of experience and exposure of older female lecturers to vast knowledge on female anatomy, reproduction and childbirth. Also, the older female lecturers have experienced life, zenith of career, affluence and now wants to settle down for childbearing while some might have experience sterility and the emotional trauma that follows. These could have exposed the older women to Assisted Reproduction Techniques (ARTs) while the younger female lecturers feel they still have time and can deal with their fertility when they are ready for childbearing.

It was discovered in the study that knowledge of reasons for oocyte cryopreservation among female lecturers in universities in Enugu State was significantly influenced by differences in age. This is in keeping with Mahesan et al., who asserted that among the different types and age groups of students, there is significant difference regarding their reasons for oocyte cryopreservation [12].

The result on table 4 showed that there is a significant difference on the level of knowledge of the procedure involved in egg preservation among female lecturers in Enugu State Universities based on their age.

Generally, the majority of the respondents knew little on issues regarding egg preservation, and less than half of the respondents irrespective of their age have low knowledge on procedure involved in egg preservation. In his study, Adeyemi found that irrespective of the age, marital status and religion of the respondents, a majority of them had not heard anything concerning IVF and there was a significant relationship between respondents' knowledge and acceptance of IVF [15]. This is a pointer to the low level of knowledge on procedures involved in assisted reproductive technology including egg preservation. Hence, public health education is needed to address the low knowledge among women within childbearing age.

CONCLUSION

It was concluded in the study that age influences the knowledge of nature of human oocyte, egg preservation, reasons for egg preservation and procedure involved in egg preservation.

RECOMMENDATIONS

Based on the findings discussed and conclusions reached in the study, the following recommendations were made:

1. Awareness creation addressing age-related fertility decline as this will assist especially those in academia make informed decisions regarding family planning. Also, awareness is needed on the healthcare systems that can help those seeking to conceive at an older age, ultimately improve their overall reproductive health and well being.
2. There is need for comprehensive education and awareness on the availability of fertility preservation options available to enable women navigating through the challenges of health-induced or age-related fertility decline to increase their chances of conception.

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