



A Survey on Attitude Towards Oocyte Cryopreservation Among Female Academic Staff in Universities in Enugu State, Nigeria

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Abstract

Career women in institutions of higher learning face the double challenges of career growth and development as well as productive reproductive life hence the need to regularly examine their dispositions towards reproductive health preservation technology during their career years. The study examined attitude towards oocyte cryopreservation among female academic staff in universities in Enugu State. Descriptive research design was adopted for the study. Three research questions in line with the specific purposes of the study guided the study. The population consisted of 398 female lecturers from seven universities in Enugu State. A total of 200 lecturers randomly sampled from six out of seven universities served as respondents. Multi-stage sampling procedure involving two stages of purposive and proportionate sampling techniques were used to sample the respondents. However, out of 200 sampled female lecturers only 171 of them consented and were used for the study. A self-made, structured and validated questionnaire was used as instrument for data collection. The instrument was personally administered and collected at a later date with the help of five research assistants while data analysis was carried out with mean and standard deviation. Findings showed that female lecturers in universities in Enugu State exhibited positive attitude towards oocyte cryopreservation, reasons for oocyte cryopreservation and procedures involve in oocyte cryopreservation ($\bar{x} = 2.72$; $\bar{x} = 2.73$; $\bar{x} = 2.83$). It was concluded that the female lectures in universities in Enugu State exhibited positive attitude towards oocyte cryopreservation. The recommendation among others is that further sensitization is needed through conferences, seminars and workshops by all relevant agencies of health including Non-governmental organizations (NGOs) for career women whose fertility potentials are threatened while Enugu State Government should establish oocyte cryopreservation centres in the major cities and towns in the State to further motivate career women including female lecturers.

Introduction

Cryopreservation is one of the technological innovations designed to assist women who may wish to delay their years of procreation. According to American Cancer Society, oocyte cryopreservation is a significant advancement in Assisted Reproductive Technology (ART) and has the potential to have a monumental impact on the field of infertility as well as society in general [1]. Oocyte cryopreservation is a more advance form of ART that has the ability to cryopreserves unfertilized oocytes. Consequently, it is submit that oocyte cryopreservation is a vital branch of reproductive science that involves the preservation of oocyte tissues for use in ART. Oocyte cryopreservation is a fertility

treatment in which a woman's mature eggs are harvested from her ovaries, frozen unfertilized, and stored for later use when she is ready to become pregnant [3]. Human oocyte cryopreservation is a procedure to preserve a woman's eggs for future use and the technique has been used to enable women to postpone pregnancy to a later date either for social reasons such as employment or studying or for medical reasons such as cancer treatment as well as other reasons including social reasons [1].

Women opt for oocyte cryopreservation for various social or medical reasons. For a healthy woman to defer childbirth by the use of oocyte cryopreservation is purposely for social or elective reasons. Social reasons entails delaying childbearing while preserving

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fertility potential for elective reasons such as nurturing career ambition and career planning. Most modern women would want to have a suitable and stable career before embarking on child bearing as some women believe that child bearing thwart career development. It could be against this background that it was pointed out that human oocyte cryopreservation for non-medical purposes called social oocyte freezing (SOF), offers healthy women the possibility of postponing having children for social reasons, such as career planning or work flexibility and a lot of organizations are beginning to offer health insurance that covers oocyte cryopreservation package [4]. A good number of international companies that could offer such assistance have been identified.

International companies such as Facebook, Google and Apple are offering female employees the chance to freeze their eggs, with the aim to give employees more freedom to pursue family planning according to their own timeline [5]. Additionally, companies that offer an oocyte cryopreservation benefit may see enhancement in recruitment of women. It is believed that common theme in discussions of corporate diversity initiatives should entail who is benefitting most from egg freezing, the organizations or the employees? It is expected that women may consider companies that offer the benefit as supportive of women in carving out the lives they want [6]. When Facebook announced its egg freezing benefit, a 37-year-old executive who worked previously at Facebook and Google said, this made her immediately look at Facebook jobs again and gave her the opportunity to control her career and choices around motherhood on her terms, and a company that would allow women control her fertility and career as well as provide financial support for those choices is one women would willingly return to [6,7]. In Enugu State, organizations such MTN, Airtel, GLOBACOM, EEDC and other financial institutions in the State could take a similar bold step as part of their corporate social responsibilities to support career ladies who may choose to preserve their fertility for certain reasons including social reasons.

Social reasons for oocyte cryopreservation as identified by one study are largely due to inability to get the right partner. According to the report, women about to undergo elective oocyte preservation indicated that a key driver was the opportunity to reduce the pressure of finding the right partner with whom to start a family.8 Other social reasons include financial reasons, panic parenting, education, partner stationed overseas, mild approach to family planning, anxiety about future fertility, choice of single motherhood, bridge involuntary childlessness, fear of previously used contraceptives, gender diversity such as being transgender and medical reasons [8].

There are several medical conditions with long term treatment that affect a woman reproductive system thus affecting her fertility however, oocyte cryopreservation could safeguard the chances of the woman having children prior to treatment. One identified medical condition with long term treatment is cancer. More people with cancer are expected to face long-term side effects of the treatment, especially with regard to their reproductive system [9]. However, most of these cancer patients that go through chemotherapy hope to bear children later in life. That is why it was agreed with The American Society of Clinical Oncology recommendations that physicians should promptly build communication with patients especially the processes of oocyte cryopreservation [10].

The process of the preservation involves the oocytes of the

woman is aspirated, frozen and cryopreserved for eventual later use in intracytoplasmic sperm injection followed by re-transfer to the uterus as an embryo [11]. Hence, through this process sterility treatment induce and age related fertility decline can be reversed. Other medical conditions that require the use of oocyte cryopreservation are ovarian disease, diminished ovarian or low egg supply, premature menopause, endometriosis severity, osteoporosis, Turner's syndrome, sickle cell anemia, autoimmune such as lupus. It could be possible that some of the female academic staff in universities to be having medical conditions that may require the use of oocyte cryopreservation hence the reasons behind finding out their dispositions towards it in this study. Their dispositions to this assisted reproductive technology could be positive or negative but which have not been successfully established empirically hence the study.

Problem statement

The social status and perception of female academic staff belonging to the elite class make them eligible to be selective in choosing their life partner or finding a suitable life partner. This might trigger a negative implication for the female academic staff as she is carried away with the allure and financial benefits associated with the eminence without paying attention to influence of age with regard to fertility decline. Besides, the job descriptions of a typical female academic staff require her to teach, examine, record students' grades, supervise students' projects, mentor them as well as other administrative responsibilities. The duties and responsibilities come with high level of stress which when combined with other domestic and family stress may negatively affect conceptions with its attendant consequences such as domestic violence, broken homes and others. Furthermore, female academic staffs who defer childbearing may find themselves affected by age-related infertility when they decide to conceive. And this may affect their level of productivity, attendance to lectures and meeting up with other expectations required of them both at home and workplace. This can further affect their social and emotional life, hence, their overall health status. If the trend is allowed to continue, unintended childlessness among female lecturers may arise. This raises pertinent question as to the dispositions of female lecturers towards oocyte cryopreservation in universities in Enugu State?

Purpose of the study

The main purpose of this study was to examine the attitude towards Oocyte Cryopreservation among Female Academic Staff in Universities in Enugu State

The specific purposes:

1. Examined the attitude exhibited towards oocyte cryopreservation among female academic Staff in universities in Enugu State.
2. Investigated the attitude exhibited towards reasons for oocyte cryopreservation among female academic Staff in universities in Enugu State.
3. Explored the attitude exhibited towards procedures for oocyte cryopreservation among female academic Staff in universities in Enugu State.

Research Questions

The following research questions guided the study;

1. What was the attitude exhibited towards oocyte cryopreservation among female academic Staff in universities in Enugu State?

2. What was the attitude exhibited towards reasons for oocyte cryopreservation among female academic Staff in universities in Enugu State?
3. What was the attitude exhibited towards procedures for oocyte cryopreservation among female academic Staff in universities in Enugu State?

Method

The research design used was a cross-sectional research format. Self-administered pretested questionnaires were given to 171 consenting female academic staff from the six sampled universities between the periods of September 2021 to April, 2022. The sample size was determined using Taro Yamane formula. Questionnaire was used to collect data from the respondents and consisted of socio-demography and attitude towards oocyte cryopreservation, reasons for oocyte cryopreservation and procedures involved in oocyte cryopreservation. The administration of the instrument was carried out with the help of five research assistants and collected at a later date. This gave the respondents ample time to adequately attend to the instrument with a hundred percent return rate. Data was analyzed using Statistical Package for the Social Sciences computer software version 23 [SPSS] for Windows Inc. Mean and standard deviation were used to answer the research questions.

Results

The results of the findings are presented as follows:

Research Question One

What was the attitude exhibited towards oocyte

cryopreservation among female academic Staff in universities in Enugu State?

From the result as presented in Table 1 above on oocyte cryopreservation, it shows that the respondents agreed to all the items with mean scores greater than 2.50 cut off point set for the study. The grand mean of 2.72 indicates positive attitude. This means that female academic staff in universities in Enugu State exhibited positive attitude towards oocyte cryopreservation. Also, the SD value for the aggregate rating (0.980) is small indicating that there were little or no extreme values. Hence, the mean values so obtained represent the actual attitude exhibited by the female lecturers regarding oocytes cryopreservation during their career years.

Research Question Two

What is the attitude exhibited towards reasons for oocyte cryopreservation among female academic Staff in universities in Enugu State?

The result as presented in Table 2 above on reasons for oocyte cryopreservation shows that the respondents agreed to all the items, except item 18 which had mean score less than 2.50 cut off point set for the study. The grand mean of 2.73 indicates positive. This means that female academic staff in universities in Enugu State exhibited positive attitude towards reasons for oocyte cryopreservation. Also, the SD value for the aggregate rating (1.030) is small indicating that there were little or no extreme values. Hence, the mean values so obtained represent the actual attitude exhibited by the female lecturers regarding reasons for oocytes cryopreservation.

Table 1. Mean Responses Scores of Female Academic Staff in Universities in Enugu State Regarding Attitude Exhibited Towards Oocyte Cryopreservation n= 171

SN	ITEM	SA	A	D	SD	X	SD	Dec
1	Oocyte cryopreservation is not an important issue for women	55	55	35	26	2.81	1.05	+ve
2	I support oocyte cryopreservation for career minded women	49	73	36	13	2.92	0.89	+ve
3	I cannot opt for oocyte cryopreservation for any reason	36	56	59	20	2.63	0.94	+ve
4	Gynecologist should not initiates discussion on elective OC	32	71	43	25	2.64	0.95	+ve
5	Gynecologist need to initiates discussion on medical OC	64	53	32	22	2.93	1.04	+ve
6	I can recommend oocyte cryopreservation to my partner	33	71	45	22	2.67	0.93	+ve
7	I cannot recommend oocyte cryopreservation to a family member	45	41	59	26	2.61	1.04	+ve
8	Oocyte cryopreservation is not culturally acceptable	29	70	43	29	2.58	0.96	+ve
9	Oocyte cryopreservation is socially acceptable	47	74	30	20	2.87	0.95	+ve
10	Having a baby through OC might create societal stigma	34	58	50	29	2.57	0.99	+ve
Grand mean						2.72	0.980	+ve

Key: +Ve-Positive. -Ve-Negative.

Table 2. Mean Responses Scores of Academic Staff in Universities Regarding Attitude Exhibited Towards Reasons for Oocyte Cryopreservation
n= 171

SN	ITEM	SA	A	D	SD	X	SD	Dec
11	Firmly support insurance coverage for oocyte cryopreservation	65	73	17	16	3.09	0.92	+ve
12	Performing OC for unmarried couples is ethical	59	62	30	20	2.94	0.99	+ve
13	Performing OC for single women is unethical	38	58	33	42	2.54	1.09	+ve
14	I don't consent to OC for the reason of use for same sex couples	58	46	35	32	2.76	1.11	+ve
15	My faith support oocyte cryopreservation	42	60	40	29	2.67	1.03	+ve
16	I don't consent to OC because it distorts God's plan for procreation	46	38	56	31	2.58	1.07	+ve
17	I don't consent to OC because of what to do with the unused eggs	35	59	47	30	2.58	1.00	+ve
18	I don't consent to OC because of negative judgment of others	25	51	60	35	2.39	0.97	-ve
19	I consent to OC because babies born via OC are legitimate	47	71	30	23	2.83	0.98	+ve
20	I consent to OC because top confidentiality is accorded to the process	51	75	26	19	2.92	0.95	+ve
Grand mean						2.73	1.03	+ve

Key: +Ve-Positive. -Ve-Negative.

Table 3. Mean responses scores of female academic staff in universities in Enugu State regarding attitude exhibited towards procedures for oocyte cryopreservation
n = 171

SN	ITEM	SA	A	D	SD	X	SD	Dec
21	I consent to HIV test prior to commencement of OC	113	24	24	10	3.40	0.94	+ve
22	I consent to Hepatitis B test prior to commencement of OC	103	26	28	14	3.27	1.01	+ve
23	I consent to the use of sedation medication during the process of egg retrieval	65	72	26	8	3.13	0.84	+ve
24	I feel there is need to sign consent papers before proceeding for OC	55	65	35	16	2.93	0.95	+ve
25	I am not sensitive to conditions related to use of fertility drugs	24	89	42	16	2.71	0.82	+ve
26	I don't consent to OC because the procedure always fails	43	24	75	29	2.47	1.05	-ve
27	It is a waste of fund when the procedure is not successful	20	75	62	14	2.59	0.80	+ve
28	I don't consent to OC because the procedure is risky	19	68	60	24	2.48	0.87	-ve
29	Performing OC might be defective on the embryo	34	60	59	18	2.64	0.92	+ve
30	I don't consent to OC because the procedure is not a natural process	40	52	54	25	2.63	1.00	+ve
Grand mean						2.83	0.98	+ve

Key: +Ve-Positive. -Ve-Negative.

Research Question Three

What is the attitude exhibited towards procedures for oocyte cryopreservation among female academic Staff in universities in Enugu State?

The result as presented in Table 3 on procedures for oocyte cryopreservation shows that the respondents agreed to all the items on the procedures for oocyte cryopreservation. However, items 26 and 28 shows disagree. The grand mean of 2.83 indicates agree. This means that female academic staff in universities in Enugu State exhibited positive attitude towards procedures for oocyte cryopreservation. Also, the SD value for the aggregate rating (0.980) is small indicating that there were little or no extreme values. Hence, the mean values so obtained represent the actual attitude exhibited by the female lecturers regarding procedures for oocytes cryopreservation.

Discussion

The findings of the study as presented in Table on attitude exhibited towards oocyte cryopreservation shows that female academic staff in universities have positive attitude towards oocyte cryopreservation. This finding is similar with that documented in literature which found a significant proportion of the women respondents exhibiting positive attitude towards oocyte cryopreservation and considered themselves to be potential freezers [12]. Just like another study which observed that women participants in a study are open to the use of oocyte cryopreservation in an attempt to avoid unintended childlessness, an indicative of positive attitudes [13]. The finding is also in tune with another which reported a positive attitude towards fertility preservation among gynecologist from different part of Nigeria [14]. The positive attitude of the respondents in this present study may be because the female lecturers as career women may wish to embark on egg freezing in order to maximize their career prospects. It could also be on account of status which may have exposed them to information regarding the technology through reading and social media platforms.

One of the findings as presented in Table 2 on reasons for oocyte cryopreservation shows that female academic staff in Universities in Enugu State exhibited positive attitude toward oocyte cryopreservation. This finding agrees with a research work which found Singaporean female professionals showing preference to egg freezing if there is appropriate legislation capable of encouraging women with adequate coverage in the country's healthcare programmes [15]. The finding also agrees with another work which found almost all participants supporting access to medical elective freezing (EF) in situations where treatments (chemotherapy) or illnesses threaten fertility, support for access to EF for non-medical indications was lower; supported EF for "lack of suitable partner", followed by "financial insecurity to raise a child" and "career/educational advancement" [16].

Despite the agreement with previous findings, the finding disagrees with a study where undergraduate and medical students used as respondents would not consider elective oocyte preservation at the present time due to its cost elements [17] despite the disagreement it is maintained that women respondents reported delaying childbearing, with career and/or education being the most frequently listed reason which favourably agrees with the findings of this present study [18]. Furthermore, the study indicated that they had both personal and professional interest in fertility preservation but identified

finances and time as barriers to use oocyte cryopreservation which is also consistent with the findings of the present study. The main reasons for the contrast with this present study could be that the respondents in this study are elites and career women who may have in one way or the other read about the success ratio of the technology and may have accounted for the positive attitude exhibited. The agreement with previous reports may be because of the general economic down turn in the country which is seriously affecting the paying capacity of public servants including lecturers in the universities.

The findings of the study as presented in Table 3 on procedures for oocyte cryopreservation shows that the participants have positive attitude towards oocyte cryopreservation procedures. The finding agrees with a study which pointed out that a significant proportion of women participants in the study considered freezing their eggs and almost half of them opting to undergo oocyte procedures [19]. Similarly, the finding falls in line with another study which found about half of Swedish women of reproductive age showing positive dispositions to oocyte procedures provided there will be no adverse outcomes [20]. This finding is also in tune with that which revealed that Belgium women of reproductive age showing positive attitude towards oocyte preservation, as long as no adverse medical and health conditions following the procedures [21].

However, despite the agreement with those previous reports, a contrast report observed that socio-cultural aspects of fertility preservation were deliberated upon and there is always suspicion about how the doctors can take out eggs, freeze them for a long time and these eggs still survive with majority of the participants having issues with mixing up the oocyte while freezing and banking them [22]. It could be that the respondents in this present study were open to learn more on this issue which may have accounted for the positive attitude exhibited by the female lecturers.

Conclusion

Based on the findings of the study, it was concluded that the female academic staff in universities in Enugu State exhibited positive attitude towards oocyte cryopreservation and also open to the use of this modern technology.

Recommendations

The recommendations among others are that:

1. Further sensitization is needed through conferences, seminars and workshops by all relevant agencies of health including Nongovernmental organizations (NGOs) for career women whose fertility potentials are threatened.
2. Enugu State Government should establish oocyte cryopreservation centres in the major cities and towns in the State to further motivate career women go for expert advice and counseling for possible sustenance of the already existing positive attitude towards the oocyte technology.
3. There is the need to deploy all levels of health communication strategies in order to sensitize and sustain the existing dispositions towards oocyte cryopreservation among female lecturers during their career years.

Data availability

All datasets generated and analysed are available in the article

Ethical approval

Ethical approval was gotten from the ethics committee of Enugu State University of Science and Technology.

Conflict of interest

The authors declare that they have no conflicts of interest.

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