

Investigation of fertility awareness amongst Obstetrics and Gynaecology and General Practice trainees

Stokes, J*.,¹ Petch, S*.,¹ Leitao, S.,² McMEnamin, M.,¹ Geisler, M.¹

*Joint First author

1. Department of Obstetrics and Gynaecology, Cork University Maternity Hospital, Cork, Ireland.
2. National Perinatal Epidemiology Centre, University College Cork.

Abstract

Aims

To compare knowledge and attitudes to fertility care and Assisted Reproductive Technologies (ART) between trainees working in Obstetrics & Gynaecology and General Practice trainees in Ireland.

Methods

This was a cross-sectional study. An online self-report survey was disseminated by email. Demographics, questions regarding knowledge of, and attitudes towards age-related fertility decline and EOC were included.

Results

Ninety participants responded. Forty-two were O&G trainees (46.6%) and 48 were GP trainees (53.3%).

Ninety-two percent of O&G respondents (n=39) and 85% of GP participants (n=41) reported they think GPs and Obstetricians should initiate discussions regarding childbearing intentions.

Forty-five percent (n=19) of O&G trainees reported a marked decrease in a woman's ability to conceive between 40 and 44 years. Seventy one percent of GP trainees (n=34) reported a marked decrease in fertility aged 35-39.

Seventy-six percent of O&G trainees (n=32) and 66% of GP trainees (n=32) do not feel that women should be encouraged to freeze eggs for social reasons. Ninety two percent of GP trainee respondents (n=44) felt GPs could benefit from more fertility exposure.

Knowledge amongst trainees is limited. There is both desire and need for enhanced education.

Abbreviations

ART: Assisted Reproductive Technologies

IVF: In Vitro Fertilisation
EOC: Elective Oocyte Cryopreservation
GP: General Practice
ICGP: Irish College of General Practitioners
O&G: Obstetrics & Gynaecology
RCPI: Royal College of Physicians in Ireland
NCHD: Non-Consultant Hospital Doctor
TTC: Trying to Conceive

Introduction

Fertility and reproductive health awareness is poor amongst the general population.^{1,2} Most people over-estimate their ability to conceive.^{2,3,4} With a global trend towards delaying childbearing and age at first pregnancy, figures from the Irish Central Statistics Office report between 1975 and 2015 the average age of first-time mothers rose by 7.5 years inside marriage and 6.3 years outside marriage.⁵

This delay in childbearing is one factor leading to an increase in Assisted Reproductive Technologies (ART) demand. Knowledge surrounding assisted reproduction amongst people is scant. As an example, women overestimate the duration of ovulation windows and fertile periods.^{2,6,7,8} However, attitudes are evolving. Daniluk et al. (2012) report that ART, especially In Vitro Fertilisation (IVF), are now part of public discourse.² An international study of 8,000 adults showed almost 90% had heard of IVF but under 25% know what is involved, its success rates or the cost.^{2,3} By appreciating gaps in knowledge, the need for healthcare professionals with experience in fertility care is heightened.

There is a varying degree of knowledge regarding fertility and assisted reproduction amongst healthcare professionals, including trainees.^{9,10,11} This is likely multifactorial, including limited exposure levels to fertility practice and differing stages of training. Limited research has been conducted however findings suggest Obstetrics & Gynaecology (O&G) trainees overestimate age of decline in female fertility and success of assisted reproduction.⁹ In addition there are a range of attitudes to elective oocyte preservation.⁹

Significant age-related fertility decline occurs from about 37 years of age in women.² Research has consistently shown women of childbearing age underestimate the effect of age-related fertility changes and overestimate the success rates of ART.^{6,10,12,13,14,15} The role of clinicians in rectifying these inaccurate estimations is vital. There is potential even those who seek information regarding their fertility status in efforts to make well-informed decisions may receive inconsistent information.^{9,10} Yu et al. (2016) found over 80% of O&G trainees in the United States (US) felt age-related fertility decline discussion should be initiated by O&G clinicians. However, almost 50% of residents overestimated the age at which there is a 'marked decline in a woman's natural fertility'^{9,10} and almost 50% of residents overestimated the success likelihood of IVF.^{9,10}

Although the way in which patients interact with Obstetricians and Gynaecologists differs between Ireland and the US, the important premise of individuals receiving counselling regarding fertility plans and choices remains. With a healthcare system far more integrated in the community, Irish General Practitioners (GP) play a vital role in fertility counselling and are usually the first doctors individuals see if experiencing infertility. This should be reflected in GP training. Providing those of childbearing age with accurate information is necessary to allow them to make informed decisions regarding lifestyle and reproductive autonomy.¹⁰ It is imperative we understand the current level of knowledge and attitudes doctors have to enable education to be improved so they can provide the best non-biased advice and care.

The aim of this study was to identify the knowledge, attitudes, and approaches to clinical practice to fertility care, fertility decline and assisted reproductive technologies amongst trainees working in O&G and GP in Ireland. To our knowledge, this was the first study to investigate fertility awareness amongst trainees in Ireland.

Methods

Study Design

This was a cross-sectional study of O&G and GP trainees. The study was reviewed and approved by the Clinical Research Ethics Committee (CREC) in Cork, Ireland.

Study Participants

Participants included trainees registered with the Royal College of Physicians in Ireland (RCPI) for Basic Specialist Training and Higher Specialist Training in O&G, and GP trainees registered with the Irish College of General Practice (ICGP) Training Scheme. Junior doctors working in O&G (not on a training programme with RCPI) were also included.

Procedure

An online self-report survey was disseminated by email via the RCPI and the individual training hubs for GP schemes. This was based on previous studies.^{7,9} Background demographics, questions regarding knowledge of, and attitudes towards, age-related fertility decline and opinions regarding the initiation of conversations with patients about age-related fertility decline were included. Questions regarding oocyte preservation in the context of cancer diagnoses and social circumstances were asked.

Data analysis

All data was collected and compiled into a Microsoft Excel spreadsheet for analysis. Chi square analyses, carried out in SPSS 27, was completed on the awareness of fertility issues of O&G and GP trainees.

Results

Ninety participants responded.

Thirty-four of 42 O&G respondents (80.9%) were registered on the RCPI Training Scheme. At the time of data collection, 149 trainees were registered for Basic and Higher Specialist Training in O&G: a response rate of 22.8%. All GP respondents were registered on the ICGP scheme. There were approximately 900 GP trainees registered: a response rate of 5.3%.

Demographics

For both groups, forty-five percent of respondents were aged between 31 and 35. Ninety percent (n=38) of O&G respondents and 72.9% (n=35) of GP trainees were female.

Eighty-eight percent of O&G trainees (n=37) and 97% of GP trainees (n=47) identified as White/Caucasian.

Ireland was the most common place of birth for both groups; 69% for O&G trainees (n=29) and 81% for GP trainees (n=39).

Experience of trainees

Sixty-nine percent of O&G respondents (n=29) were currently working in a tertiary maternity unit. Thirty-five percent (n=15) were unsure of career plans and 11% (n=5) were focusing on Reproductive Medicine and Surgery.

There was representation from all GP training years; 29% (n=14) in training Year 1 and 25% (n=12) in Year 4. Fifty-two percent (n=25) had O&G experience and a further 39% (n=9) were due to rotate through O&G. Sixty-two percent (n=30) reported an interest in women's health or fertility with 9 respondents (18.7%) reporting they have further qualifications within the area. Twelve respondents (25%) reported they received formal training in fertility during their GP scheme. Ninety-two percent (n=44) of GP trainees felt GPs could benefit from more fertility education.

Attitudes

Ninety-three percent (n=39) of O&G respondents and 85% of GP trainees (n=41) reported that they think GPs and Obstetricians/ Gynaecologists should initiate discussions with their patients regarding potential childbearing intentions.

Knowledge

Trainees' knowledge regarding female fertility, decline of fertility and estimations of IVF success are presented in Table I.

Table 1. Obstetrics & Gynaecology trainees awareness of fertility issues

Fertility issue	O&G (N= 42)	GP (N= 48)	P value
At what age is there a <i>slight</i> decrease in a woman's ability to become pregnant?			
15-24	0%	0%	< 0.001
25-29	16.6%	12.5%	
30-34	61.9%	62.5%	
35-39	21.4%	25%	
At what age is there a <i>marked</i> decrease in a woman's ability to become pregnant?			
30-34	2.38%	0%	0.072
35-39	45.2%	70.8%	
40-44	45.2%	27%	
45-49	7.1%	2%	
What is the overall chance, on average that a couple who undergoes treatment with in vitro fertilization will have a child after one treatment?			0.111
0-19%			0.111
20-29%	16.6%	37.5%	
30-39%	47.6%	43.7%	
40-100%	28.5%	14.5%	
	7.1%	4.16%	

Attitudes towards clinical practice

Seventy-six percent of O&G trainees (n=32) and 66% of GP trainees (n=32) stated they did not feel that women should be encouraged to freeze their eggs for social reasons. The ages at which trainees felt women should freeze their eggs are depicted in Figure 1.

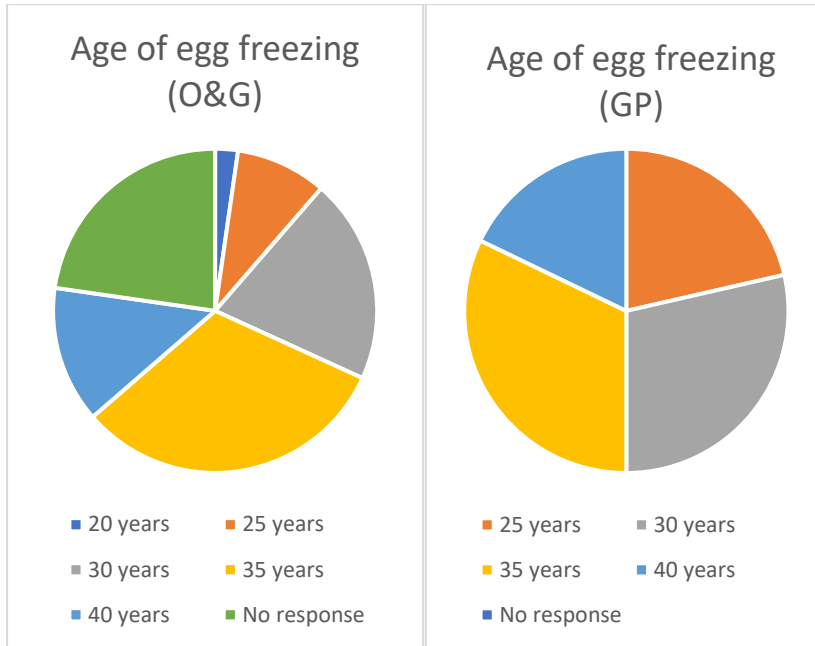


Figure 1. Comparative Pie-chart representations of the age by which O&G & GP trainees think women should freeze their eggs

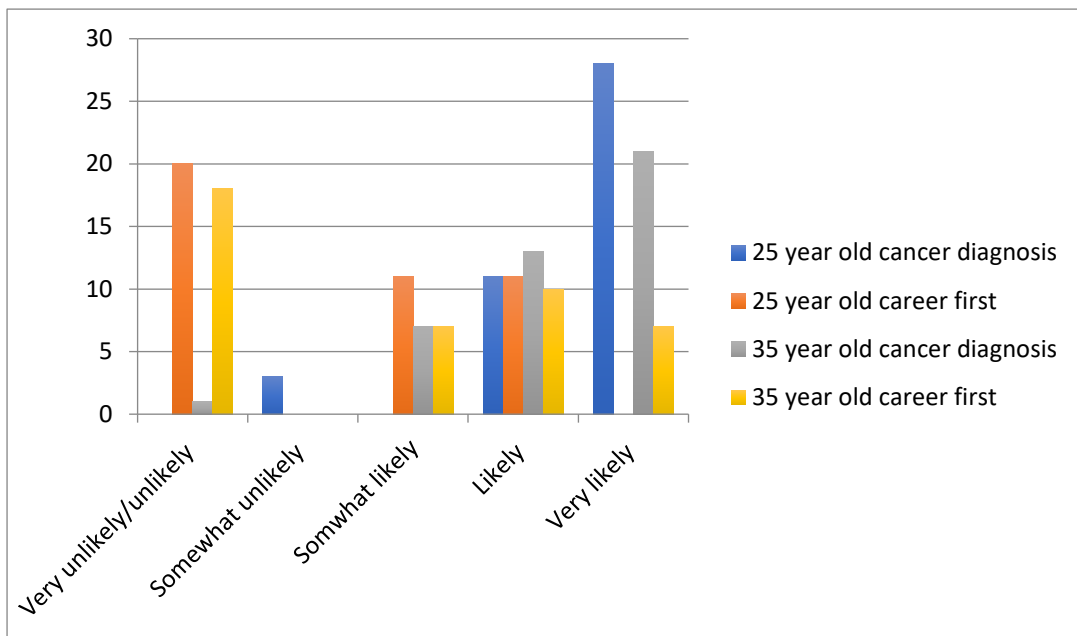


Figure 2. Likelihood of discussing oocyte cryopreservation amongst O&G trainees

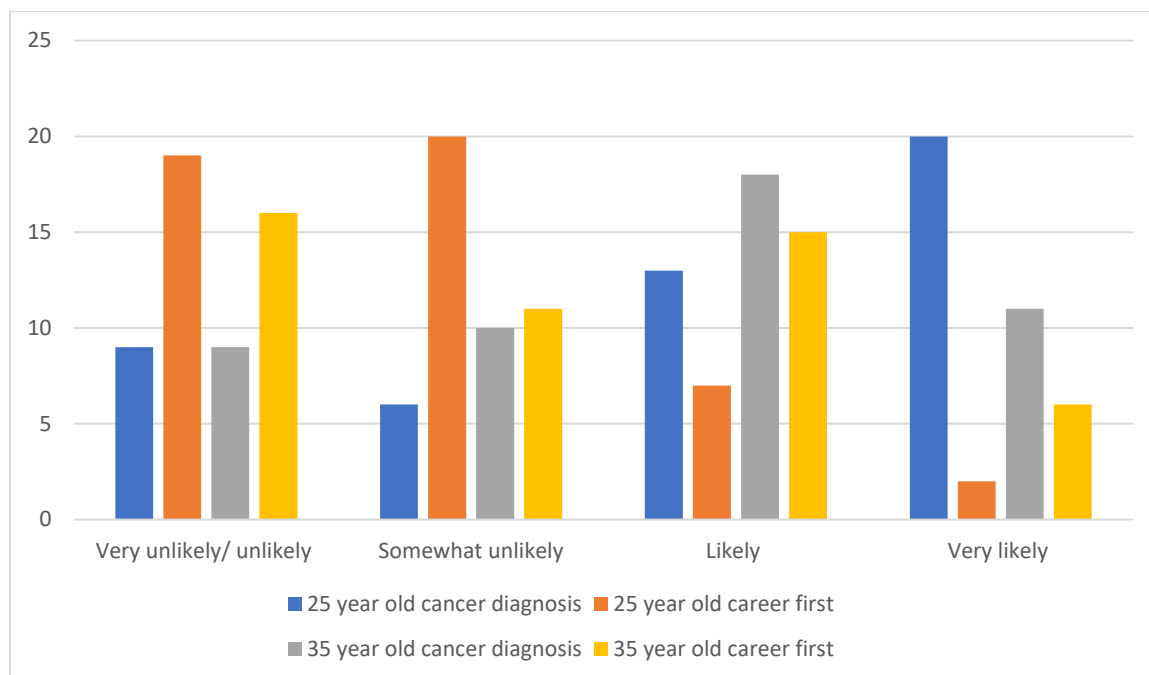


Figure 3. Likelihood of discussing oocyte cryopreservation amongst GP trainees

Discussion

This study has replicated previous findings of poor knowledge amongst trainees. Over 85% of respondents felt doctors should initiate conversations about childbearing intentions. High numbers also felt discussions about age-related fertility decline should be initiated. Fritz et al. reported 74% of respondents felt discussions about age related fertility decline should be started by professionals but only 27% of respondents actually do so.¹⁰ As mentioned previously, gynaecology services are delivered differently in both countries. The importance of physicians as health educators is evident but women do not discuss the effect of age on fertility with their doctors, despite citing them as their primary information source.^{9,12, 16}

Similar to Yu et al., participants displayed inaccurate knowledge regarding fertility decline.⁹ Over 60% of both groups correctly reported a slight decrease in ability to conceive between ages 30-34 years; a more reassuring figure than 33% of US trainees.⁹ However consistent with previous findings, nearly half of O&G trainees reported a marked decrease in a woman's ability to conceive between 40 and 44 years when in reality this occurs earlier, at approximately 37 years.^{9, 17,18} Interestingly, 70% of GP respondents were correct in their estimation of age at which fertility sharply declines.

More than 70% of O&G trainees and 77% of GP respondents were correct in their assessment that when a woman is under 35 years investigations should start after 1 year trying to conceive (TTC). When she is over 35 years, investigations should commence after 6 months. Less than 60% of specialist

trainees but over 70% of GP trainees correctly identified this. Irish doctors displayed better understanding of ART success than American trainees.⁹ More pessimistic rates of livebirth from IVF were suggested; almost half of O&G trainees cited a 20-29% percent chance of live birth after one treatment.

Due to lack of exposure, ART can be an abstract concept. It is necessary to educate trainees that success is directly related to patient age.⁹ Yu et al. cite women under the age of 35 years in the US have a 41.5% chance of a livebirth using IVF versus 11.7% for women aged 41-42 years.^{9,20} Success rates vary in different countries and clinics. It is important to educate trainees with figures from European and Irish fertility services; to give our population accurate information. Published overall clinical pregnancy rates (fetal heart, fetal pole or a clear pregnancy scan seen on ultrasound at 6-8 weeks) for an Irish based fertility centre for 2021 were 37.5% for those under 35 years and 29.7% for those aged 40-41 years.²¹

The age at which trainees felt women should freeze their eggs varied but 50% of O&G trainees and 18% of GPs felt 35 years was the upper limit. Interestingly, 16% of O&G trainees and 10% of GP trainees felt this age should be 40 years. It is widely known oocytes reduce in quality and fecundity diminishes the further a woman is past 30 years.²² A 2013 study found 80% of women wished they had undergone EOC at a younger age.^{9,23} Studies suggest 34 years of age may be the upper age limit by which completion of EOC leads to the highest probability of livebirth.^{9,23} Research around EOC cost effectiveness suggests EOC by age 35 years in women who plan to delay childbearing until age 40 reduces cost per live birth.^{9,24} Despite the majority of trainees not promoting elective cryopreservation, it is reassuring their advice is correct regarding suggested age limit.

The majority of both groups did not feel women should be encouraged to freeze their eggs for social reasons. Unsurprisingly, O&G trainees were more likely to discuss EOC with a 25 year old with a malignancy versus someone focusing on their career (66% vs 47% respectively). Fritz et al. showed 90% of Obstetricians and Gynaecologists would give fertility counselling to a woman of reproductive age who was facing gonadotoxic treatment, however only 55.5% would counsel patients for social reasons.¹⁰ The reasons for this are likely related to a combination of lack of knowledge and financial support as well as limited service access. This is compounded by the fact that currently in Ireland egg freezing is only state-funded in the context of malignancy. However, with the growing trend of certain private sectors covering the cost of EOC for employees, demand for counselling will rise.

A German study of oncologists found although the majority thought fertility preservation was important, just 50% felt they had good knowledge and only 40% discuss it with patients regularly.^{9,24} Japanese breast cancer specialists showed individuals with more positive views on EOC were more likely to initiate discussions.^{9,26} Are Irish doctors not discussing EOC with patients because of lack of knowledge or are there other societal factors at play beyond the scope of this research?

The findings of our survey highlight the need for education improvements. It is worth noting that a rotation in O&G is not a compulsory part of Irish GP training. Just over half of those who took our

survey completed a four month long rotation in O&G, often with minimal fertility exposure. However, over 90% of GP trainees felt they would benefit from more training.

This is a novel area of study amongst trainee doctors in Ireland. We assessed current knowledge and awareness amongst trainees and highlight areas warranting improvement to ensure dissemination of accurate information. It forms the basis of future research including exploration into why EOC counselling is not supported by up to 70% of clinicians and assessment of Consultants' knowledge and attitudes towards fertility could yield interesting results for comparison, leading to improved training.

As this was a self-report survey, there is a possibility of self-selection bias. This is evident with over 62% of GP trainee respondents displaying interest in women's health. This renders researchers unable to compare characteristics of non-responders.⁹ However, many of the findings are similar to that of US research, leading to an acceptable level of consistency.

The number of respondents was low. Various avenues were explored to increase recruitment. Although Yu et al. had larger numbers, their response rate was only 5% of all US Obstetrics and Gynaecology trainees. From registered O&G trainees alone the response rate for this survey was 22%.

In line with other research, there was a gender bias.⁹ Female trainees made up 90% of O&G trainees and 72.9% of GP trainees. Although this is may not be an accurate reflection of the breakdown, reports from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists cite in 2018 women made up 83% of those entering their training.²⁷

Professionals involved in reproductive health have a duty to ensure accurate dissemination of information. It has been proven that patient knowledge, intentions and decision-making processes around childbearing are impacted by the information they receive.^{9, 19} Our key message is that more training in fertility is needed. By improving confidence, knowledge and awareness of fertility investigations and ART amongst Irish doctors, individual patients and couples will be more informed and better placed to make the best decisions for their reproductive health.

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

Jenny Stokes,
Department of Obstetrics and Gynaecology,
Cork University Maternity Hospital,
Cork,
Ireland.

E-Mail: jestokes@tcd.ie

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