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COMMENT



Systematic protocol and methodology needed for pre-procedure counselling of elective egg freezing patients in Singapore

Alexis Heng Boon Chin^a , Sherine Sandhu^b , Lucy Caughey^b , Mohd Faizal Ahmad^c  and Michelle Peate^b 

^aSingapore Fertility and IVF Consultancy Pvt Ltd, Chinatown, Singapore; ^bDepartment of Obstetrics and Gynaecology, Royal Women's Hospital, University of Melbourne, Melbourne, Australia; ^cAdvanced Reproductive Centre (ARC), Department of Obstetrics & Gynecology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Cheras, Kuala Lumpur, Malaysia

ABSTRACT

Upon legalization of social egg freezing in Singapore from 2023 onwards, compulsory pre-procedure counselling is mandated for all prospective patients to enable informed choice about whether to undergo the procedure. Being a newly introduced medical procedure in Singapore, there are currently no clear directives on what pre-procedure counselling for elective egg freezing should entail. Due to pervasive media and internet influences, prospective egg freezing patients could be misled into believing that the procedure represents a guaranteed path to future motherhood, contrary to statements by professional bodies such as the American Society for Reproductive Medicine (ASRM) and the British Fertility Society (BFS). Hence, comprehensive counselling is recommended to provide women with evidence-based information (e.g. success rates of social egg freezing for women of their age) to ensure they make informed decisions and to avoid possible decision regret. For this purpose, a systematic protocol and methodology for pre-procedure counselling of women considering elective egg freezing was developed, incorporating flowcharts and decision trees that are specifically tailored to the unique sociocultural values and legal restrictions in Singapore. Questions relating to the why, what, how, where and when of the egg freezing procedure should be addressed, which could serve as a roadmap to facilitate informed decision-making by women considering elective egg freezing.

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Cryopreservation; ethics; non-medical; oocyte; social; vitrification

Introduction

In March 2022, it was announced that from 2023 onwards Singapore will permit elective egg freezing, also referred to as planned oocyte cryopreservation or social egg freezing (Ang, 2022; Tan, 2022). Married and single women aged 21 to 35 years will be eligible to undergo the procedure, but only married women will be permitted to utilize their frozen eggs with IVF (*in vitro* fertilization) treatment (Ang, 2022; Tan, 2022). Single motherhood by choice is officially discouraged by the government in Singapore (Ang, 2022). However, there are currently no local laws to stop single women from exporting their frozen eggs to a foreign fertility clinic for IVF treatment with donor sperm (Ang, 2022).

It was also announced that pre-procedure counselling will be compulsory for all women considering elective egg freezing (Ang, 2022; Tan, 2022); to enable them to better understand the medical risks, financial

costs, and chances of success before deciding to undergo the procedure. Currently in Singapore, fertility counselling is provided by a network of private and freelance professional counsellors who are certified and accredited by the Reproductive Technology Accreditation Committee (RTAC) of Australia (Tan, 2017). Individual fertility counsellors are often affiliated with, but not directly employed by specific IVF clinics. There are currently three public and eight private IVF centres in Singapore, each with an affiliated senior counsellor (Fertility Society of Australia, 2023).

Being a newly introduced medical procedure in Singapore, there are currently no clear directives on what pre-procedure counselling for elective egg freezing should entail. Pervasive media and internet influences could mislead prospective egg freezing patients into believing that the procedure represents a guaranteed path to future motherhood, contrary to official statements by the Ethics Committee of the American Society for Reproductive Medicine (2018) and the

British Fertility Society (2020). Furthermore, patients lacking specialized knowledge can also be easily misled by scientific data published in reputable medical journals that claim high success rates with frozen eggs (Chin, 2021; Rienzi et al., 2020), which unknown to them, are based on frozen donated eggs from young (aged 20–25 years), fertile and healthy women, collected specifically for use by infertile patients (Rienzi et al., 2020). Such ‘good-looking’ data are often touted and advertised by fertility doctors and clinics, but do not reflect the typical elective egg freezer (older, single and healthy or with varied medical conditions) (Figure 1).

Hence, comprehensive counselling is needed to correctly inform women about social egg freezing and avoid misconceptions. Therefore, we have developed a systematic protocol and methodology for pre-procedure counselling of women considering elective egg freezing. This is based on combining and synergizing our rich and diverse expertise on egg freezing from the University of Melbourne, (Caughey et al., 2021; Caughey & White, 2021; Peate et al., 2022; Sandhu, Hickey, Braat, et al., 2023; Sandhu, Hickey, Lew, et al., 2023), Malaysia (Ahmad et al., 2020, 2021) and Singapore (Chin, 2022a; Chin et al., 2022).

These procedures have been specifically tailored to meet the unique sociocultural values and legal restrictions in Singapore. They incorporate flowcharts and decision trees to address questions about the why, what, how, where and when of the egg freezing procedure (overview and summary of protocol in Figure 2); thereby serving as a roadmap to facilitate informed decision-making by women considering this procedure, which some may view as expensive, time-consuming, and invasive. Major differences in the sociocultural context of egg freezing in Singapore versus Australia

include (i) only married heterosexual women in Singapore can utilize their frozen eggs for IVF treatment, (ii) unmarried women are banned from using sperm donors to pursue single motherhood, (iii) there is greater influence of social and family pressure (within an Asian cultural context) on women deciding to freeze their eggs. The protocols and methodologies described here do not specify how patient counselling will be delivered or the style of engagement. This will depend on the counsellors’ preferences. Rather, these tools were designed to highlight the relevant issues to be discussed with women considering elective egg freezing and to facilitate informed choice. To date, the only study to describe a procedure to facilitate informed decision making for women considering elective egg freezing is the ‘Eggsurance study’ (Peate et al., 2022).

Socio-demography and motivations of elective egg freezing patients

Surveys carried out by Inhorn, Birenbaum-Carmeli, Westphal, et al. (2018), Inhorn, Birenbaum-Carmeli, Birger et al. (2018) in the United States and Israel revealed 85% of educated professional women who underwent elective egg freezing lacked an available partner for childbearing at the time they undertook the procedure. Reasons included inability to find a suitable and compatible partner, being divorced, breaking up, overseas deployment, as well as being a single mother and career prioritization (Inhorn, Birenbaum-Carmeli, Westphal, et al., 2018). The remaining 15% of patients who had a partner at the time of elective egg freezing, were motivated by being in a new or uncertain relationship, having a partner who was not ready to have children or did

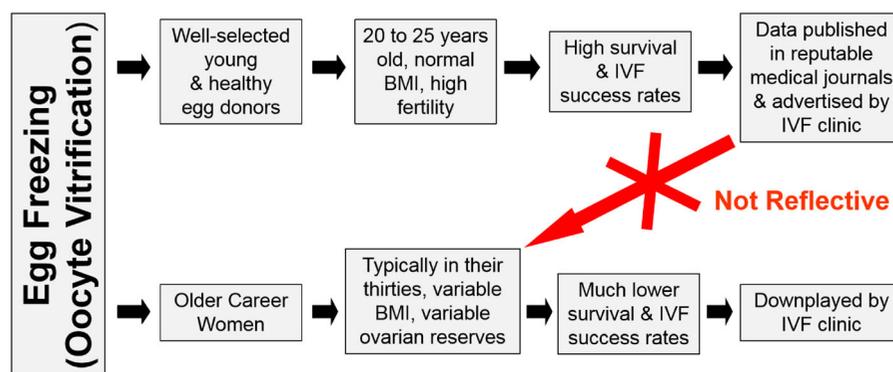


Figure 1. Data claiming high survival and IVF success rates with frozen eggs, as published in reputable medical journals may be particularly misleading to prospective patients without specialized knowledge in this area. They must rightfully be informed that such data relate to young and fertile egg donors, typically between 20 to 25 years of age, with normal BMI (body mass index) and in the prime of health. This is certainly not reflective of older career women undergoing egg freezing with variable BMI and lower ovarian reserves.

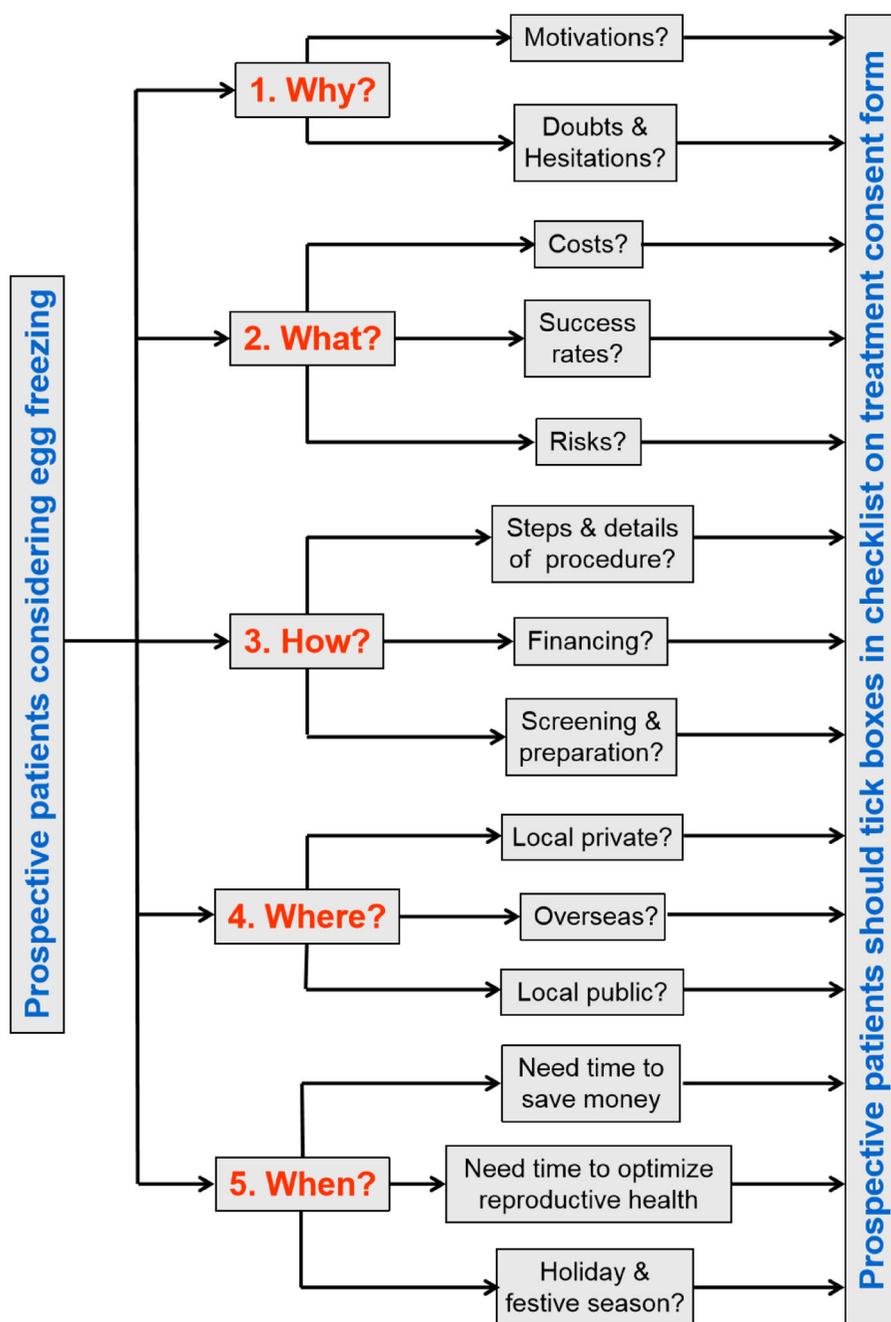


Figure 2. Overview and summary of protocol for systematic and comprehensive pre-procedure counselling of prospective patients considering elective egg freezing.

not wish to have children, or having a partner in multiple relationships (Inhorn, Birenbaum-Carmeli, Westphal, et al., 2018).

Women are finding it increasingly difficult to find suitable partners due to (1) Educated professional women's higher expectations; (2) Men's lower commitments; (3) Skewed gender demography in higher education; and (4) Self-blame, as reported by Inhorn, Birenbaum-Carmeli, Birger et al., (2018). Educated professional women worldwide are faced with a deficit of educated men with whom to pursue childbearing, due to women now significantly outnumbering university-

educated men in the USA, Israel, and nearly 75 other countries according to World Bank data (Inhorn, Birenbaum-Carmeli, Birger et al., 2018). Women not finding a suitable partner is a major factor driving the increasing uptake of elective egg freezing among educated professional women, particularly among certain ethnic groups (Inhorn et al., 2021), whereas only a small minority of egg freezing patients were motivated by career planning/prioritization (Inhorn et al., 2021).

Baldwin et al. (2019) also reported women having 'difficulties in finding a partner' as a major motivation

to undergo elective egg freezing, which in turn led to fears of running out of time to form a conventional family, concerns about 'panic partnering', and a desire to avoid future regrets and blame. Additionally, Baldwin et al. (2019) reported that a significant proportion of egg freezing patients were also influenced by recent fertility or health diagnoses as well as critical life events, with a fifth of surveyed participants disclosing an underlying fertility or health issue affected their decision.

Another motivating factor for elective egg freezing is the increasing awareness of the technique and fear of age-related decline in fertility. A study of Israeli and Danish university students (both male and female) reported that participants were well-aware of the sharp drop in female fertility after their mid-thirties. (Hashiloni-Dolev et al., 2020). This could be due to their higher education and the widespread media coverage of elective egg freezing. For example, the well-known television documentaries 'Motherhood on Ice' (2014) and 'Seeds of Time' (2014), have contributed to increasing awareness of social egg freezing and female age-related fertility decline among the younger generation (Kroløkke, 2019).

Why? Asking prospective patients to carefully consider their motives and doubts about egg freezing

As a starting point, pre-procedure counselling on elective egg freezing should require women to carefully consider their motivations for wanting to undergo the procedure, and address any doubts and/or hesitations they might have (Figure 3). For all scenarios, women need to consider the psychosocial implications of their decision, and what they might do if they have unused frozen eggs at the completion of their journey. For instance, women who freeze their eggs because they are single, need to be made aware that if they do not meet a suitable partner, they may have to make a decision on what to do with their unused frozen eggs. In Singapore, women are limited by being required to have a legal spouse to receive IVF treatment (Ang, 2022; Tan, 2022) and same-sex marriages are banned. Moreover, unlike many Western countries, *de facto* marriage via co-habitation is not recognized by the Singaporean legal system. Therefore, access to IVF treatment with frozen eggs is only available for women in traditional heterosexual marriages that have been formally sanctioned and legalized by the state (Ang, 2022; Tan, 2022). During elective egg freezing counselling, prospective patients

should be encouraged to consider a timeframe they intend to keep their eggs in storage, perhaps after reaching a certain age where motherhood is neither desirable nor practical. For example, when they feel their remaining lifespan may not be adequate for bringing up a child to adulthood, or feeling that they will be less able to cope with the physical demands of child-rearing.

For women deciding what to do with their unused frozen eggs, there are many options available, such as disposal, donation to another woman, donation for research, or single motherhood by exporting their frozen eggs overseas for IVF treatment with donor sperm. The first three options require women to forgo the substantial costs, time and effort they have invested in elective egg freezing including storage fees. As part of pre-procedure counselling, it would be helpful if women were informed of the available options of disposing their unused frozen eggs, perhaps when egg storage is being discussed. Therefore, women can make disposition decisions based on correct information, taking into account the complexity of such decisions that changes over time, as reported by Caughey et al. (2023). In addition, prospective egg freezers should be made aware of success rates of live births for women of their age, so they can be mentally and emotionally prepared if they do not reach their motherhood goals.

The last option of exporting frozen eggs for IVF treatment with donor sperm overseas would require serious consideration, due to the social stigma associated with single motherhood in Singapore, and the discriminatory policies and laws against single mothers (Garcia, 2019; Yadav, 2019). For example, various government-funded pro-family incentives such as public housing subsidies, tax rebates and cash-gifts to newborn babies are only available for married heterosexual couples in Singapore (Garcia, 2019; Yadav, 2019). Sperm donor-conceived children of single mothers would be considered illegitimate and not entitled to automatic inheritance rights to their parent's estate (Garcia, 2019; Yadav, 2019). Hence, prospective elective egg freezers would need to be informed of these discriminatory policies and the potential legal challenges they could face if they choose single motherhood through the export of frozen egg route (Garcia, 2019; Yadav, 2019). At a personal level, prospective egg freezers should consider whether they have adequate financial resources and family support to meet the various pertinent challenges of single motherhood by choice (Chin, 2023a). Additionally, they must also be informed that transport of their

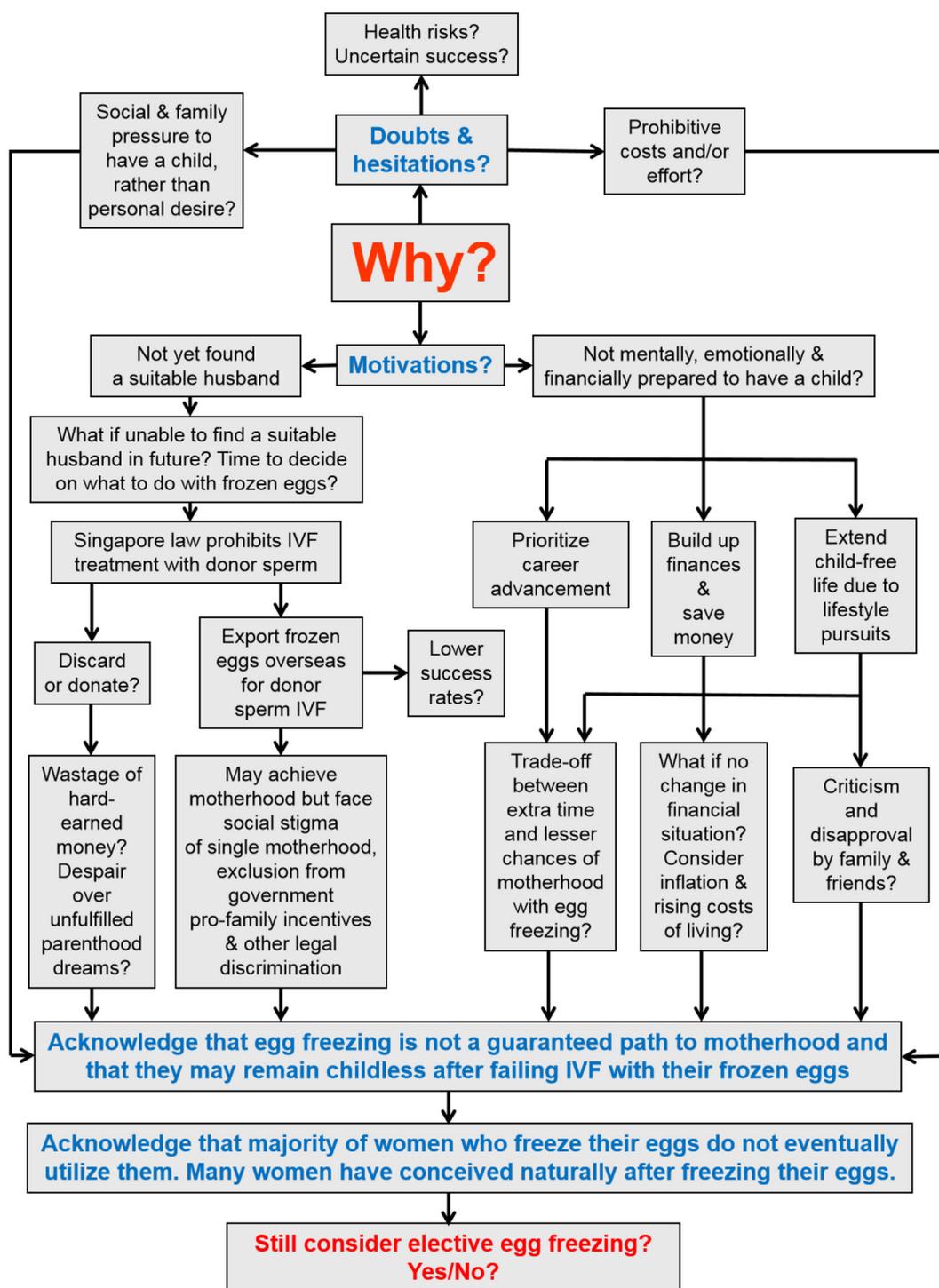


Figure 3. Flowchart/decision tree summarizing a protocol for counselling prospective patients to consider their motivations for wanting to undergo egg freezing, as well as encouraging them to clear any lingering doubts and hesitations that they might have.

frozen eggs to another clinic located overseas may impact success rates, because different laboratory protocols used for egg freeze-thawing may differ and be incompatible. Moreover, there is also a possible risk of damage to the frozen eggs during transport. These may not be issues that prospective patients understand or may consider at the time of counselling.

Women who choose to freeze eggs because they are unprepared emotionally and/or financially to have a child at the time (Yee et al., 2022), may need to consider what might happen if they do not achieve their goals within a reasonable timeframe (particularly if they are also single). Goals may include the desire to prioritize career development before starting a family,

building up their personal savings to cope better with the high costs of child-rearing, or extending their period of independence and freedom for certain lifestyle pursuits and leisure activities such as travelling. To enable a more informed choice, women should be counselled to weigh up the benefits and drawbacks of their choices. This includes whether it is worthwhile trading lower chances of achieving later motherhood versus elective egg freezing for better career advancement (compared to conceiving in the nearer future). Also, for those delaying pregnancy to build up their personal savings to better cope with the high costs of child-rearing, consideration should be given to the impact of inflation and rising costs of living with time. Within the conservative sociocultural norms of Singaporean society, it would be considered selfish and irresponsible to delay motherhood via egg freezing just for the sake of lifestyle pursuits and leisure activities, which may be met by strong disapproval and much criticism by family and friends. The objective of counselling is not to discourage or distress women, but ensure that they are aware of the implications of their choice within the conservative social structures of Singaporean society; and provide them with useful suggestions to overcome any barriers should they choose to pursue elective egg freezing.

Conversely, while considering their motives for pursuing egg freezing, prospective patients must also address any doubts and hesitations they might have about the procedure. For example, do they genuinely desire having children? Or are they bowing to social and family pressure to have kids? This is not a trivial issue in conservative Asian societies such as Singapore, where there is social stigma attached to unmarried and/or childless women. At the same time, some women may have doubts about investing their money, time and effort into the egg freezing procedure, particularly as outcomes are uncertain. As part of pre-procedure counselling, prospective patients need to be made aware that freezing eggs is not a guaranteed path to motherhood (British Fertility Society, 2020; Ethics Committee of the American Society for Reproductive Medicine, 2018); and that there is always a risk of remaining childless after attempting IVF with their frozen eggs, which frequently results in much distress and grief (Caughey et al., 2023). Additionally, they should be made aware of the evidence that most women who freeze their eggs do not eventually utilize them (Blakemore et al., 2021; Hammarberg et al., 2017; Polyakov & Rozen, 2021; Schatz, 2022). The longest follow-up study to date by Blakemore et al. (2021) examining utilization rates among patients who

stored their eggs for more than a decade, found that less than 40% returned to use their frozen eggs. Although there has been an upward trend over the last decade in frozen egg use which may increase with time, there will likely be a cohort that will never use their eggs. Indeed, many former patients who did not utilize their eggs managed to conceive naturally (Blakemore et al., 2021). This might lead to some women feeling that they wasted their money, time and energy. Some may even regret their choice. However, most do not regret their decision (Greenwood et al., 2018).

Figure 3 outlines the recommended discussion points that should be covered in counselling sessions to address the 'why' for women in Singapore who are considering elective egg freezing. Women may have many issues (e.g. concerns or motivations) they wish to address and each issue and the associated implications should be raised and discussed as needed. After having considered and acknowledging these issues, their counsellor can ask them whether they would still be interested in undergoing egg freezing.

What? Informing patients about the potential risks, side-effects, costs, and chances of success with egg freezing

After addressing the various motives for wanting to undergo egg freezing, fertility counsellors can then proceed with informing patients about the potential risks, side-effects, costs, and chances of success with egg freezing (Figure 4).

There are both medical and non-medical risks associated with egg freezing. Medical risks most commonly involve ovarian hyperstimulation syndrome (OHSS), in which the body overreacts to injected hormones during the process of ovarian stimulation, characterized by severe bloating, shortness of breath and abdominal pain (Pakhomov et al., 2021). Enlarged ovaries due to OHSS may twist (ovarian torsion), and could result in further complications (Pakhomov et al., 2021). The severe form of OHSS can be life-threatening and egg freezing patients may end up hospitalised, but this is extremely rare (Pakhomov et al., 2021). Moreover, day-surgery for egg retrieval is an invasive procedure that carries a small risk of bleeding, viscus perforation and infection (Levi-Setti et al., 2018). In addition to the medical risks *per se*, prospective patients should also be informed about the various side-effects that they may experience during the egg freezing procedure, such as nausea and vomiting induced by hormone

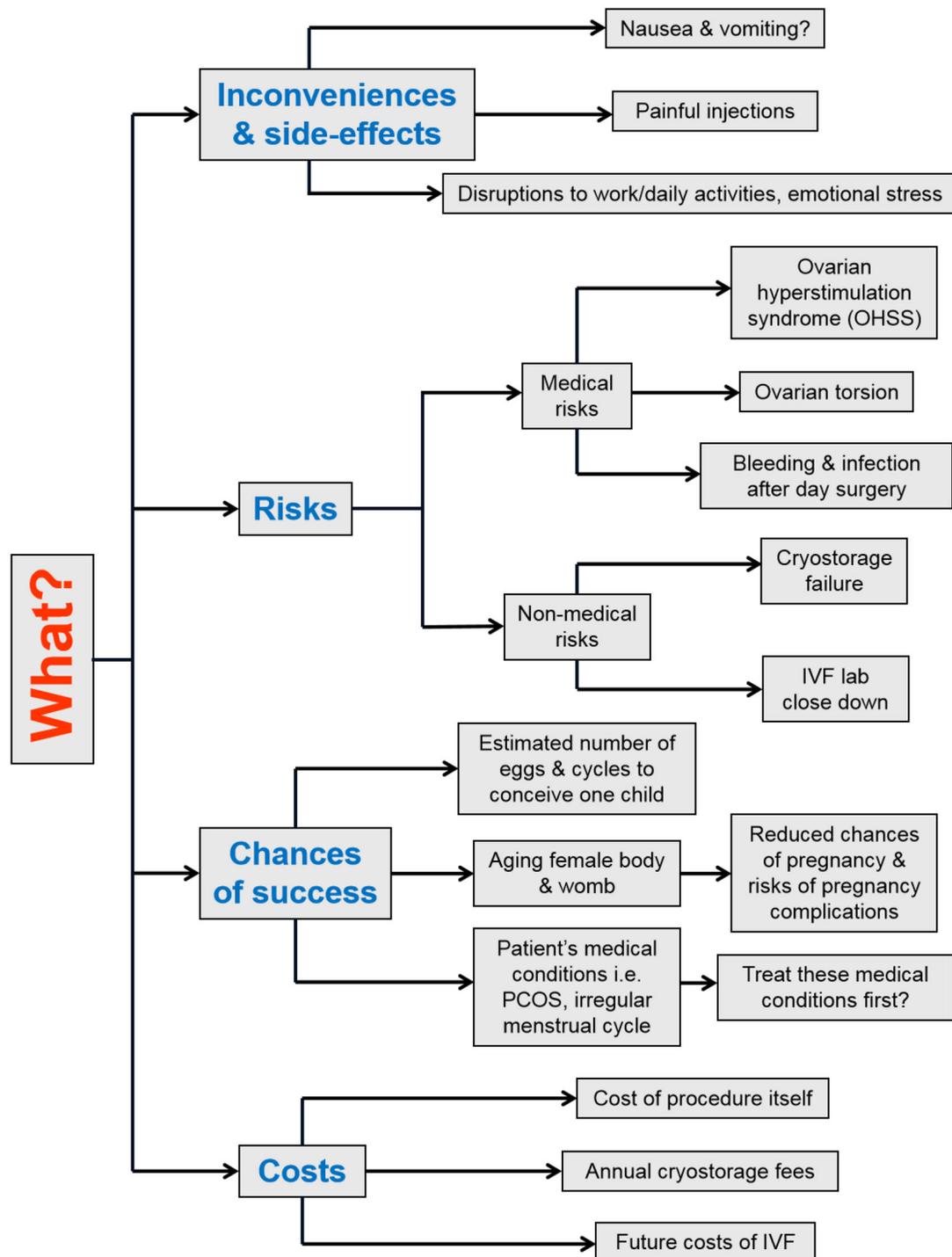


Figure 4. Flowchart/decision tree summarizing a protocol for counselling prospective patients on what are the potential discomforts, hassles, risks, chances of success and costs of the egg freezing procedure.

injections, as well as pain caused by daily injections, regular blood tests and ultrasounds.

There are also non-medical risks to consider, such as the possibility of cryopreservation storage failure, most commonly caused by leakage/damage of liquid nitrogen cryotanks where the frozen eggs are stored, failure of temperature-monitoring and alarm systems, unavoidable natural disasters and negligence of

laboratory staff. To date, there have been a number of high-profile cases in the United States, whereby patient's frozen eggs and embryos have been irreversibly damaged and rendered unusable by such unfortunate mishaps, resulting in lawsuits and compensation claims being filed by patients, and payouts by fertility clinics amounting to several millions of dollars (Moutos et al., 2019; Rinehart, 2021). Currently in

Singapore, no compensation or insurance schemes for egg freezing patients have been mandated for cryo-storage failure. A more remote possibility is the risk of the IVF lab going bankrupt or winding up its business, in which case the frozen eggs have to be either disposed of or transferred to another cryostorage facility.

Prospective egg freezing patients should also be counselled on their chances of success (i.e. having a live birth), based on their age and medical condition. Based on a prediction model developed by Goldman et al. (2017), a woman less than 35 years of age needs to freeze 6, 14, and 30 eggs to have a 50%, 80% and 95% chance of conceiving a child from her frozen eggs respectively. The corresponding number of egg freezing cycles needed to achieve the required eggs can then be calculated, based on statistical data showing that women younger than 35 years collect an average of 13 eggs per cycle (Victorian Assisted Reproductive Treatment Authority, 2021). Hence to achieve more than a 90% probability of conceiving at least one child with her frozen eggs, a woman aged less than 35 years would need at least 3 egg freezing cycles. There are also medical conditions that can reduce a woman's chances of successful outcome. These include polycystic ovary syndrome (PCOS) (Joham et al., 2022), low ovarian reserves (Gurbuz et al., 2021), and irregular menstrual cycles caused by aberrant hormone levels (Sun et al., 2020). Additionally, prospective egg freezing patients should be made aware that while a woman's frozen eggs do not age, her womb and body will continue to age, which could lower her chances of future pregnancy as well as increase the risk of medical complications if she becomes pregnant. It is well known that women have increasing chances of developing medical conditions such as uterine fibroids, endometriosis, high blood pressure and gestational diabetes with age (American College of Obstetricians and Gynecologists' Committee on Clinical Consensus-Obstetrics, Gantt et al., 2023; Seshadri et al., 2021), all of which are negative prognostic factors in pregnancy and childbirth.

Finally, women should be informed about the total costs and financial outlays required for egg freezing. There are three components. Firstly, the cost of the egg freezing procedure itself. In Singapore's public hospitals, the typical costs of an egg freezing cycle range from SGD\$7,000 to SGD\$9,000 (USD\$5,400 to USD\$7,000), while the costs in local private IVF clinics are typically between SGD\$10,000 to SGD\$15,000 (USD\$7,700 to USD\$11,500) (Salim, 2022). Secondly, there are annual storage costs, which would range from SGD\$500 (USD\$385) in local public hospitals to about SGD\$900 (USD\$690) in private IVF clinics (Salim,

2022). Thirdly, prospective egg freezing patients must also factor in future costs for using their frozen eggs with IVF, which would in turn be influenced by inflation and rising medical costs. Nevertheless, for Singaporean citizens and permanent residents, there are government subsidies for IVF treatment (Ministry of Health Singapore, 2022), as well as availability of funding from their Central Provident Fund Medisave account (Ministry of Health Singapore, 2021).

How? Explaining how egg freezing and ancillary procedures work, and how to finance it

Subsequently, prospective patients need to be properly informed about how egg freezing and ancillary procedures work, and how they can finance them (Figure 5). Currently, there are several detailed articles on the various steps of the egg freezing procedure and how frozen eggs are stored, which are published by mainstream government-affiliated news media in Singapore (Kow, 2022; Salim, 2022; Zhuang, 2022). Prospective patients would be well-advised to refer to these articles (specifically from government-affiliated local media outlets) to learn more about the procedure and what they can expect during treatment. The process typically starts with ancillary procedures. For example, pre-procedure screening via ultrasound scan is used to check the ovaries and ovarian reserves to evaluate the suitability of prospective patients for egg freezing (Fleming et al., 2015). Blood serum levels of follicular stimulating hormone (FSH) and Anti-Mullerian hormone (AMH) (Cakiroglu et al., 2022), and optional checking on the health status of their womb (whether there are any uterine polyps or fibroids) (Ayida et al., 1997). Other ancillary procedures may include pre-procedure preparation of the body to optimize success of the egg freezing procedure (Chin, 2022b), focusing on lifestyle changes, weight control, exercise, diet, vitamin supplements and complementary/alternative medicine therapies such as acupuncture.

Then, there is the key question of how prospective patients can finance the egg freezing procedure. There is currently no intention by the Singapore government to subsidize the procedure (Ministry of Health Singapore, 2021, 2022) or allow patients to utilize their own Central Provident Fund Medisave account (Ministry of Health Singapore, 2021, 2022). Hence, prospective patients may have to rely on their personal savings, sell their assets or take a loan to fund the egg freezing procedure. Alternatively, they

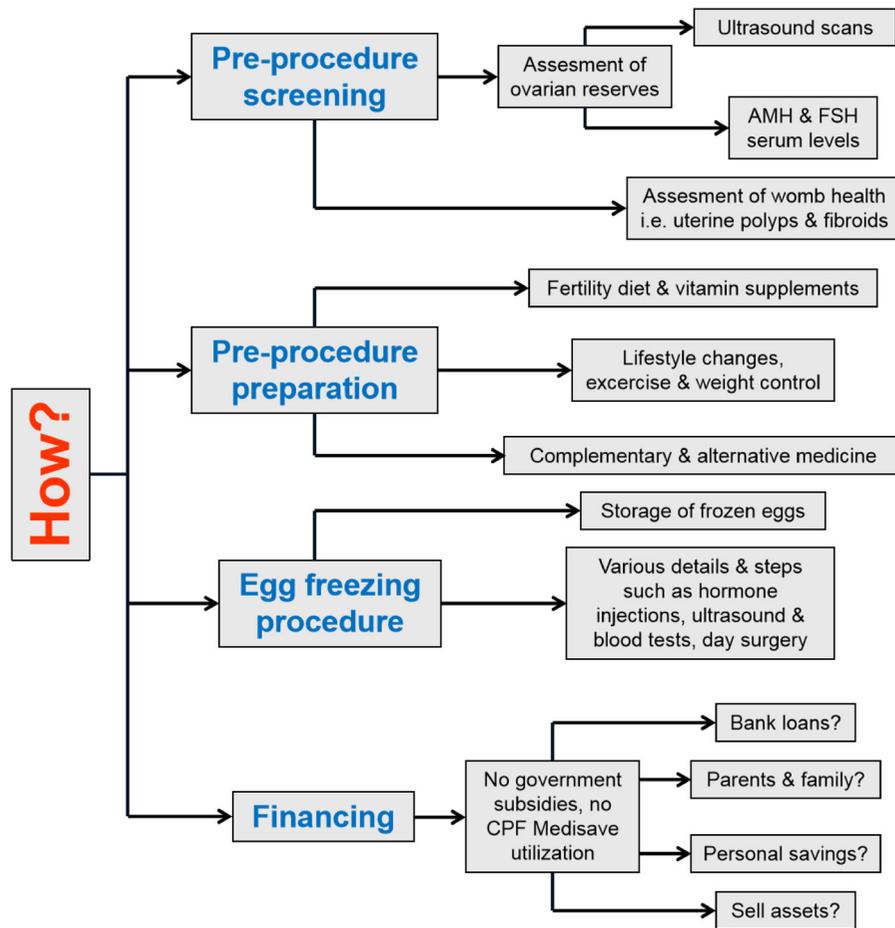


Figure 5. Flowchart/decision tree summarizing a protocol for counselling prospective patients on how the egg freezing and ancillary procedures are like, and how they can finance it.

may also be able to request financial assistance from their family members.

Where? Advising patients on where they can undergo egg freezing

Prospective patients also need to be advised where they can undergo the procedure (Figure 6). Currently, Singapore permits social egg freezing only for women between 21 to 35 years of age (Ang, 2022; Tan, 2022), however, women who marginally exceed this age limit can appeal to undergo the procedure locally (Ang, 2022; Tan, 2022). Hence, for most women above the age of 35, the only choice is to travel abroad to undergo egg freezing at a foreign fertility clinic. Eligible patients aged less than 35 years have the option of choosing cheaper IVF programmes at local public hospitals (with long waiting times) or more expensive local private IVF clinics (with short waiting times). In any case, prospective patients would be well-advised to make their choice based on the IVF clinic’s track record of achieving live births with frozen

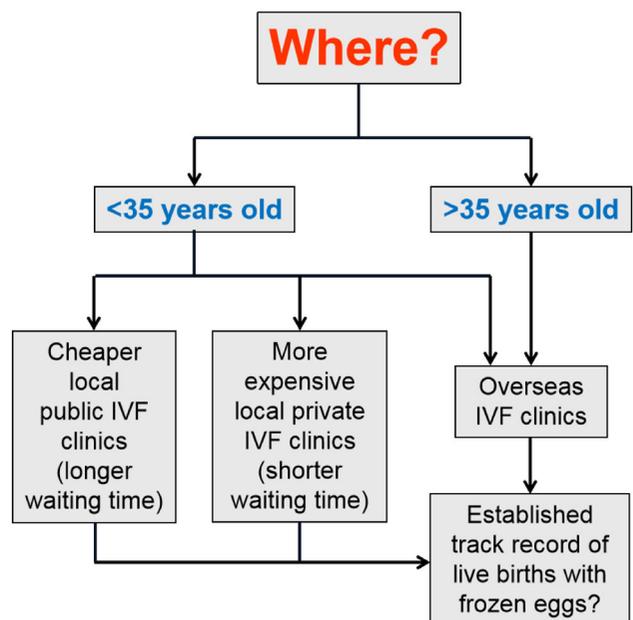


Figure 6. Flowchart/decision tree summarizing a protocol for counselling prospective patients deciding on where they can undergo egg freezing.

eggs and the clinic's experience with any medical conditions they may have. However, women need to consider that because egg freezing has only recently been introduced in Singapore, most local fertility clinics, whether private or public, will have either no or limited track record of achieving live births with frozen eggs. Only well-established foreign fertility clinics will have track records. These clinics may be considered by more affluent women who are willing to pay more for medical staff experienced in this procedure.

When? Advising patients to carefully plan when they can undergo the egg freezing procedure

Finally, prospective patients should be advised to carefully plan when they can undergo the egg freezing procedure (Figure 7). Women with busy work schedules should note that the egg freezing procedure is time-consuming, with numerous medical appointments for doctor consultations, blood tests, ultrasound scans and day surgery for egg retrieval. This can be particularly challenging for women who have firm daily schedules with little flexibility. Hence, women need to carefully plan the timing they choose to freeze their eggs, so they can take leave or time-off for the multiple medical appointments, which typically occurs over 2 to 3 weeks. They may opt for times when their workplace is less busy, and can afford the flexibility of taking leave at short notice (e.g. for egg collection procedures). Perhaps they should be

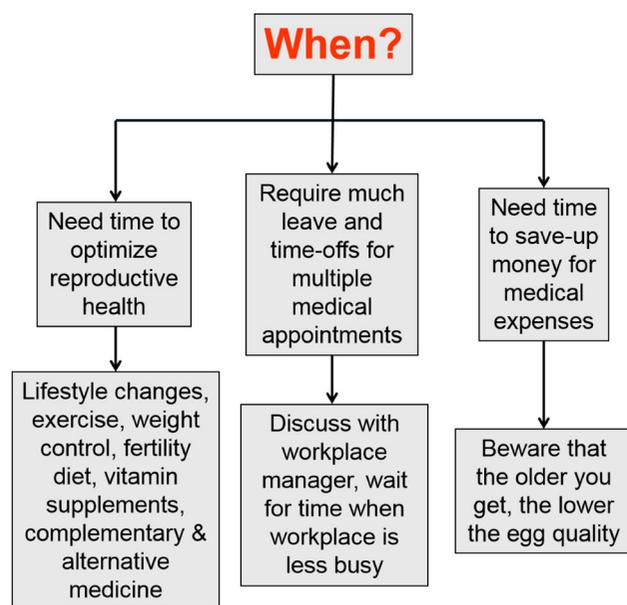


Figure 7. Flowchart/decision tree summarizing a protocol for counselling prospective patients to carefully plan when they can undergo the egg freezing procedure.

encouraged to discuss and coordinate the procedure timing with their workplace manager if they feel comfortable to do so. The cost of egg freezing may also influence when they can undergo the procedure. Some women may need to save money for the procedure or may prefer to wait until they have an influx of money (e.g. annual bonuses from their company) before pursuing the option. Additionally, some women may want to undergo some pre-procedure preparation to optimize their fertility before egg freezing, for example having a carefully controlled fertility diet regime and taking vitamin supplements as adjuvant therapy for a few months before starting the procedure (Chin, 2022b).

Conclusions

Currently, there is widespread and extensive availability of information on the egg freezing procedure that can be readily accessed through the internet and various media outlets. This includes flashy advertisements from various egg freezing start-ups and profit-driven fertility clinics worldwide. However, such information may potentially be misleading, as these are driven by commercial interests. Hence, there is a need for systematic and comprehensive pre-procedure counselling of prospective egg freezing patients, to ensure that they make informed decisions about whether to use the technique. It is thus hoped that the systematic flowcharts and decision trees outlined in this study could facilitate better pre-procedure counselling for prospective egg freezing patients. Perhaps as a safeguard, the Singapore Ministry of Health should prepare a printed pamphlet or booklet to provide adequate, relevant and timely information to prospective egg freezing patients, which should also be published online (Chin, 2023b). Another safeguard would be to place a checklist of tick boxes within the patient consent form to ensure that they acknowledge certain vital pieces of information, before signing and submitting the form (Chin, 2023b). For example, elective egg freezing being a non-guaranteed path to motherhood, so they risk remaining childless after attempting IVF with their frozen eggs; and that most women who freeze their eggs do not eventually utilize them, which may be due to many of them conceiving naturally (Polyakov & Rozen, 2021).

Ethical approval

Not required as there are no human subjects or animal studies

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ORCID

Alexis Heng Boon Chin  <http://orcid.org/0000-0002-3547-5271>

Sherine Sandhu  <http://orcid.org/0000-0002-3294-3340>

Lucy Caughey  <http://orcid.org/0000-0002-4461-7374>

Mohd Faizal Ahmad  <http://orcid.org/0000-0002-2735-3274>

Michelle Peate  <http://orcid.org/0000-0003-2903-4688>

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