

# Egg Freezing: Is it a Reproductive Freedom or A New Control Over Women's Reproductive Capacity?

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## **Abstract:**

Assisted Reproductive Technology (ART) provides various ways to achieve pregnancy when it is not possible naturally due to medical, social and other reasons. Among widely used ART, egg freezing is the newest reproductive technique that enables women to preserve their fertility for both medical and non- medical reasons. First developed in the late 1980s, egg freezing was primarily offered to women with medical conditions to maintain their fertility, but since October 2012, this technique has also been used for non-medical or social reasons after the American Society for Reproductive Medicine (ASRM) removed experimental label from it (Bhatia and Campo-Engelstein 2018). Since then, the fertility industry began to emerge and expand promoting egg freezing as a means for reproductive autonomy and choice using feminist language and women empowerment messages as their selling point. Many feminist scholars are doubtful about true intent of this technology, argue that this is another form of control over female bodily autonomy, reproductive capacity and reinforce patriarchal heteronormativity (Strickler 1992; Donchin 1996; Harwood 2009). Using reproductive justice framework as my main analysis tool, this research project explores whether the egg freezing technique enhances reproductive choice and autonomy for all women, regardless of their socioeconomic status, gender identity, class, race, ethnicity, marital status, and disability as claimed by fertility companies or hinders achieving core values of reproductive justice and gender equality in society. To answer my research question, I did an extensive review of feminist scholarly discourse on reproductive technologies and ethics and conducted a content analysis of websites and social media of 20 major private fertility companies in the United States, looking into the core themes, visuals, and language they use in advertising egg freezing technology.

*Keywords: social egg freezing, reproductive justice, marketed reproduction, selective breeding, eugenics, legitimate motherhood, welfare, heteronormativity, medical control, commodification, empowerment*

## **INTRODUCTION**

Assisted Reproductive Technology (ART) provides various ways to achieve pregnancy when it is not possible naturally due to medical, social and other reasons by applying the procedures such as In Vitro Fertilization (IVF) or surrogacy. Among widely used ART, egg freezing is the newest reproductive technology that has been made accessible to all women since 2012 for fertility preservation and delayed childbearing. First developed in the late 1980s, oocyte cryopreservation or more commonly known 'egg freezing' was primarily offered to women to preserve their healthy unfertilized eggs when faced with the threat of infertility due to their health condition or medical treatment (Baldwin et al. 2014). In October 2012, after American Society for Reproductive Medicine (ASRM) lifted the experimental label from egg freezing, it has become intensively commercialized by private fertility companies for all women of childbearing capacity. The eggs are retrieved from follicles by surgery, frozen and stored in laboratories of fertility clinics for their later use to conceive a biological child by the same woman from whom the eggs were retrieved or donated to another recipient. According to ASRM, egg freezing

technique typically works best for women in their 20s and 30s while their eggs are fertile and is not recommended for women over 38, also warns not to rely on egg freezing even at younger age to delay childbearing as the chance that one frozen egg will yield a baby in the future is around 2-12 percent (Reis and Reis-Dennis 2017).

The market for this technology began to emerge and expand since October 2012, when ASRM lifted the experimental label on egg freezing to be used also for non-medical, social purposes. According to the report for 2018 by Market Research, there are about 480 U.S. fertility clinics, 100+ sperm banks, an unknown number of egg donors competing for the business (Market Research 2018). The high technology companies such as Apple and Facebook were the first to welcome this fertility technology and publicly announce their willingness to cover the costs of SEF (Social Egg Freezing) for their employees, which stipulated the growth of the fertility industry as well as fertility coverage by other employer companies. Soon after, many other companies, such as Yahoo, Google, Citigroups, Netflix, and Uber started to offer fertility benefits for their employees in the amount of 20,000 USD (Geisser 2018). Most of these companies are companies with 500 + employees and very few companies with more than 50 employees. The ascendancy of companies offering fertility benefits, especially SEF coverage to their female employees, raises controversy among social critics and feminist scholars. The most debated argument is that egg freezing benefit intends to retain the employees, allow them to invest more time, energy, and labor into their jobs, save administrative costs as well on pregnancy instead of providing flexible work arrangements, paid parental leave, corporate childcare and adequate wages (Geisser 2018; Bhatia and Campo-Engelstein 2018; Cattapan et al. 2014).

Currently social egg freezing (used for non-medical purposes) is popular among women for several reasons other than medical, such as in order to attain educational and professional goals, find a suitable partner, and other personal reasons. According to the findings of US mainstream newspapers content analysis conducted by feminist scholars, 50 percent of articles notes that SEF allow women to pursue their education and career, 34 percent to plan their family, 21 percent is an insurance against the future infertility and 42 percent of articles point out that SEF gives women time to find a partner to have a child and family with as an advantage of SEF (Bhatia and Campo-Engelstein 2018). This reproductive technology may be attractive, especially for young working women to enhance their education and career as they worry about their "ticking biological clock" given the fact that a woman's fertility drops from 86 percent at age twenty to 52 percent at age thirty-five. Another fact that increases the need for this technology in the market is that the number of women having babies above thirty has increased 150 percent since the 1970s. Given that women today prefer their first child at an older age, social egg freezing may be a viable solution for women to extend their reproductive aging (Geisser 2018).

In 2014, when corporations (Facebook, Apple, Google, Intel, etc.) announced that they would cover costs of SEF for their employees, the fertility industry and donor egg banks started intensively promoting the SEF in the market by using mainstream feminist rhetoric such as women have no longer to choose between their careers and desire to have their biological children or create a family, and now with SEF they can "take control of their career as well as their reproductive future" (Bhatia and Campo-Engelstein 2018). According to the US media analysis research, Facebook COO Sheryl Sandberg's widely popular bestseller *Lean In* that appeared in 2013 shortly after SEF emergence in the market as a reproduction option for women, may have helped the fertility companies to market the procedure more widely and

attract women dealing with work-family conflict by using Lean In feminist and women empowerment messages (Bhatia and Campo-Engelstein,2018). One of the largest fertility companies Extend Fertility on its website advertises egg freezing as a breakthrough for women's reproductive freedom, unlike the original contraceptive pills with the headline that reads, 'Fertility. Freedom. Finally,' (Harwood 2009). Recently, this market has begun to attract more investors as a potentially profitable industry due to the growing interest of women in SEF and the expansion of the egg freezing market. For example, Jon E. Santemma, one of the main investors in this industry, points out how the market grows 25 percent a year with an increased number of patients and cycles per year which is promising for investment ("Egg Freezing 'Startups"2019). Although ASRM recently changed its position with the use of eggfreezing by stating that it is ethically permissible for women who want to use this technique to protect against future infertility, but also calls on egg freezing technology providers to ensure that potential women patients "are informed about its efficacy, safety, benefits, and risks, including the unknown long- term health effects for offspring (Daar et al.2018). In addition, there is not much information available on whether women are generally aware of the effectiveness, safety and cost of egg freezing (Milman et al.2017). Despite ASRM warnings and feminists' critiques (Cattapan et al.2014; Reis and Reis-Dennis 2017; Giesser 2018; Daar et al.2018) about lack of data on viability, safety, efficacy of SEF, the number of women freezing their eggs increases every year. According to the latest data by ASRM for 2017, the number of women who have used egg freezing technique was 9, 042 people in 2017 as opposed to 2, 488 women in 2012, but this number does not include data for all fertility clinics only those members of ASRM ("National Summary Report" 2020). Moreover, there is not segregated data available on how many women use egg freezing for social reasons as opposed to medical one and sell/donate eggs.

In addition to being an option or choice for women to preserve their fertility while they continue their other life journeys, there are certain disadvantages associated with SEF. Firstly, it is a very costly technology, the cost of one cycle ranges from \$10,000 to \$15,000 plus storage costs, which costs from \$500 to \$1,200 per year. Some women go through more than one cycle depending on their age. And the cost for In-vitro fertilization (IVF) a process of fertilizing eggs and transferring the embryos to the uterus approximately costs \$5,000 (Geisser 2018). Therefore, not all women can afford this reproductive technology if they do not have decent work with good health insurance and do not receive employer benefits to cover associated expenses which according to feminist scholars exacerbate racial and class inequalities related to use of this reproductive technology (Cattapan et al. 2014).

Before egg retrieval, a woman deciding to get SEF, has to take hormones, makes self-injection of powerful hormones once or twice a day for 8 to 11 days on average to produce eggs before retrieval of eggs which oftentimes follows side effects such as fatigue, nausea, headache, mood symptoms, fluid accumulation in abdomen. And hormone medication for self-injections can cost between \$3,000 to \$7,000 which are not typically covered by insurance. After that, she undergoes surgery to extract and freeze the eggs, which also leads to health consequences during egg retrieval (Cattapan et al 2014; Almeling 2007). Despite lack of sufficient data on live birth rate, efficacy and safety of this procedure for women and offspring conceived through this procedure, the fertility companies continue marketing egg freezing as a means to defer childbearing, preserve fertility to potential consumers especially professional women who have delayed or consider delaying childbearing (Harwood 2009). By referring to John Robertson's claim that individual's freedom should be limited if he or she instills tangible harm to another person, Karey Harwood argues that it would be legitimate to limit or even prohibit the use of

egg freezing if the procedure causes health risks to women and offspring as well as psychological harm by creating false hope in women (Harwood 2009).

With this research project, I examine if this reproductive technology really gives an opportunity to all women to exercise their reproductive rights and freedom as promised by fertility companies, whether this technology reinforces reproductive justice or creates barriers to achieve justice and gender equality regardless of race, class, ethnicity, gender and sexuality and disability. My research project tries to find answers to the following primary questions in this research:

1. What does reproductive rights and freedom mean in the context and practice of egg freezing and how does SEF enable or restrain to adequately exercise reproductive rights?
2. What are advantages, concerns and complications related to the use of this technology? Do all women have ability to access these reproductive technologies offered by the fertility clinics?
3. What are potential ethical implications or eugenic functions in this reproductive technology?
4. Does this technology involve selective breeding, if so, how?
5. Who are SEF ads appealing to? Who are the potential customers/patients of fertility companies? Whose interest and needs are most privileged by this procedure?

The main methods of this research work are two-fold: a literature review including feminist accounts and discourses on medicalization of women's reproductive capacity and a content analysis of 20 major private fertility companies across the USA, analysis of their websites and social media. This content analysis focuses on the textual content of websites and social networks of fertility companies that provide SEF services for non-medical reasons. Using the reproductive justice framework, I conducted textual analysis to examine the content, language, images, messages, marketing strategies, patients' testimonials and lived stories the fertility companies use to advertise and promote use of SEF.

### **MAJOR FINDINGS FROM ANALYSIS**

The results from content analysis conducted within the reproductive justice framework shed light on power relationship, interests and motives involved into egg freezing technology and its commercialization, the underlying ideology and legacy in application of reproductive technologies historically and at present in relation to women's bodily function. In addition, this research project draws attention to how this technology is used to control the female body, especially reproductive capacity, and how this control over reproduction and fertility is taken away from women and transferred to medicine, how woman's uterus and bodily function are treated both by patients and fertile industry as biological machine to produce most sought product safe, healthy and impeccable babies. This research finds out how bodily integrity of women is compromised through this invasive technology which also reinforces heteronormative motherhood by emphasizing declining fertility and infertility as a serious medical condition and this technology as a solution and option to infertility. Furthermore, this research also determines eugenic practices exercised and reinforced through this reproductive technology to produce only perfect infants those of dominant supreme gene screened for any genetical disease and disabilities and born to a wealthy, preferably white and economically privileged couples or individuals who have an ability to access and afford this costly and technologically sophisticated fertility techniques and treatment.

The fertility companies provide their services and products based on the neoliberal economic principle, and that is consumerism approach that support those having the ability to purchase the fertility option they chose depending on their preference. Another point in the analysis that stands out is the relationship between the fertility industry, employer corporations and health insurance companies, which should be studied with emphasis on the economic interests that each party has in relation to commodification of women's tissue. The fertility companies participating in this research project keep the language and content of their advertising and promotion for egg freezing technology simple, basic like advertising those of daily commercialized goods or services by using success stories and testimonials of their patients who have obtained their 'miracle' babies through the fertility services they provided.

Many of the companies analyzed emphasize the following core issues when promoting SEF:

- Infertility as a serious concern and SEF as a solution to this problem
- Importance of age to conceive a genetic child
- have a family and having a child means a family
- Financing options, customized approach tailored to patients' financial circumstances free egg
- freezing campaigns, bonus, grants, contests.
- Employer Fertility Coverage, Fertility Benefits
- Pre-Implantation genetic testing( PGD) service to produce "perfect" babies screened against potential genetic disease, disability and other medical conditions
- Promotion of images of blonde, brown eyed children as most 'demanded' desire child 'product' through SEF

The language and message the fertility clinics use may seem promising and encouraging to women trapped in work/family conflict, anxious and worried about their declining fertility while they try to attain their personal and professional goals, there are some concerns harnessing the potential of this reproductive technology.

Firstly, access to this reproductive technology is still largely limited to women with substantial financial resources therefore women's experience regarding how this fertility technology enhances their reproductive autonomy and options is rather controversial. The cost of this fertility technology is the most emphasized theme in almost all promotional campaigns and advertising by the companies. They intensively share updates on their social network about the employer fertility coverage for egg freezing and IVF, and even offer to talk to employers to get the customer covered for egg freezing.

The messages and images they use for advertising their fertility services is targeted; it appeals to predominantly working women to produce anxiety in this particular group of women about age-related fertility by over-emphasizing the need to freeze their eggs in order to maintain their fertility. Most women depicted on SEF ads are dressed in business clothes, behind the laptop, talking on the phone and in the office places or messages addressed to women with career goals. Not all women have a chance and opportunity to make their reproductive choice by means of this technology which conflicts the rhetoric the clinics use with choice, control, freedom to persuade women to use their fertility services. The cost of single cycle ranges from \$10,000 to \$15,000 plus storage costs, which costs from \$500 to \$1,200 per year. And the cost for In-vitro fertilization (IVF)-the process of fertilizing the egg and transferring the embryo

to the uterus approximately costs \$5,000 (Barbey 2017; Geisser 2018). Plus, the hormone treatment the potential female patients undergo to produce more eggs before egg retrieval costs \$3,000 to \$7,000 which are not typically covered by insurance companies. Even Sarah Elizabeth Richards who actively promoted egg freezing techniques and froze her eggs to preserve her fertility, expressed her concern and disappointment about the cost of egg freezing on her article in *The Wall Street Journal* stating that “the cost [for egg retrieval only excluding the cost for freezing and storing eggs] is prohibitively high for most women and is rarely covered by insurance or paid for by employers” (Richards 2013). On the other hand, not all employers offer the fertility benefit to their employees, companies offering fertility benefit are those with 500+employees and only over 10% of companies with more than 50 employees. Judith Daar in her book *The New Eugenics* touches upon various factors affecting differential access to reproduction and various reasons why ART is inaccessible for those “less wealthy, less white, less traditional and less abled-bodied” people noting that deprivation of access to reproductive technologies by ‘undesirables’ bears eugenic intent and significance (Daar 2017, p. xiii). Michiel De Proost and Gily Coene argue that although “economically privileged people of all racial, ethnic, religious, and national origins are participating in this industry, those most likely to possess the financial resources to purchase ART services remain over-determined by racial, class, and opportunity structures” (Proost and Coene 2019, p. 365)

Another issue that is profusely cited by sample private fertility clinics in their promotional materials about egg freezing technology is infertility commonly emphasized theme or concern by almost 19 clinics out of overall 20 sample size in this research. The language they are using to offer egg freezing technology mostly is about importance of this technology to treat infertility rather than using it for social purposes such as in order to pursue education and career, give time until they make decision regarding having a child and family or other non-medical purposes. The companies use celebrity stories and patients’ testimonials about their struggle with infertility issue and how they achieved their dream to have children with means of fertility technologies. Jennifer Stickler notes that the reproductive technology that solves such issue as infertility also enables for new form of medical intervention into women’s bodies. Until 1970s, infertility was often considered not amendable with the medical intervention. But later, thanks to medical innovations, this fertility problem began to be treated with the help of biomedicine. Infertility became increasingly technological area for medical intervention as opposed to earlier infertility treatment that tried to treat immediate cause of the problem. Gena Corea, a member of FINRRAGE (Feminist International Network of Resistance to Reproductive and Genetic Engineering) argues that this technological improvement does not aim to solve the issue of infertility but is about “the issue is exploitation of women” (Strickler 1992, p. 111). The reproductive technology that offers variety of solution to infertility also changes the societal attitude to the issue. Infertility that had been regarded as individual issue and was explained with religious belief has also changed. Referring to Nietzschean concepts of nihilism, Joseph Tham points out that we as a society no longer require God’s interference and, our notion of truth especially regarding human procreation, infertility that we have regarded as objective truth provided by God for decades have changed (Tham 2012, p. 116).

The fertility companies such as Reproductive Science Center of New Jersey (RSCNJ) and Loma Linda Center post on their social networks the messages about their success on infertility, using comments of their patients in a more exaggerated manner to instill interest in people to their ‘supernatural’ fertility services. For example, in below article RSCNJ used their patient’s comment about kindness and friendly staff at the center as the heading of their article “RSCNJ

staff are angels on Earth" with the doctor's image depicted as an angel. The image of a white doctor portrayed as angel reminds the mystification, superiority of white middle-class male doctors and their control over the reproductive capacity of women in Victorian times and the marginalization of midwives from the medical industry. The increased focus on infertility by fertility companies raises the question of whether infertility is indeed prevalent issue in the United States or intends to seize power and control over women's reproduction and reinforce heteronormativity with motherhood role of women. According to the research, Black women are more likely to experience infertility than those of white women (Wellons et al.2008) and black women do not seek infertility treatment as much as their white sex group members due to ethnic and racial disparities in accessing reproductive health care, social and cultural factors and historically created mistrust to the US health care system ( Daar 2017, p. 92).

Very few Americans have access to insurance coverage for fertility treatment and that coverage are mostly made available through their employers or the state they reside those mandates for infertility coverage. Currently only 18 states have fertility insurance coverage laws requiring certain insurers to offer coverage for infertility diagnosis and treatment, and nine states have fertility preservation laws for medically induced infertility ("State Infertility Insurance Laws" 2020). According to ASRM, 6.1 million people (10 percent of the reproductive-age population) in the United States are infertile<sup>i</sup>. ASRM indicates that many patients are still not covered for their infertility despite the passage of infertility insurance mandates by the states ("State Infertility Insurance Mandates", 2019). According to Judith Daar, 85 percent of ART treatment for infertility is paid out of pocket, therefore income and wealth are major indicators in order to afford high-cost infertility care and infertility treatment is stratified by race and ethnicity (Daar 2017, p. 83-85). Thus, the disadvantaged women are deprived from the luxury to exercise their reproductive freedom as well get treatment for their infertility with the aid of SEF. Annie Donchin touches upon anti- technology feminist scholars' perspectives arguing that the technologies are not politically neutral instruments, but "that political choices are already woven into the fabric of the technologies that makes their way into the market" (Donchin 1996, p.489). Another moment is that many of the fertility companies see infertility as a woman's issue by addressing the messages about infertility to women and portraying images of women in their advertisement despite the increasing rate of male infertility. According to the American Pregnancy Association, male infertility constitutes 30% of all infertility cases and male infertility alone makes approximately one-fifth of all infertility cases<sup>ii</sup>. Most feminists argue that technological conception transfers reproductive control from women to physicians even though some women are unable to conceive in a traditional way and may benefit from IVF after unsuccessful intensive medical treatment. Women are defined as the primary factors for identifying the problem of infertility and its solution (Strickler 1992, p.116). To most feminists, the problem is not a woman's inability to bear children (which is seen as an individual but not as a social problem) but the structure and institutions of society that reinforce need for childbearing as women's fulfilment in one hand, and physicians' increasing power in managing procreation on the other (Strickler 1992).

Another factor emerging from this analysis concerns women's bodily integrity and the control over their reproductive capacity. More than 75 percent of the fertility clinics depict SEF providing option, opportunity and choice for women to preserve their fertility, keep their options open, and give them a voice who struggle with balancing career and fertility concern. For those people, the options they are offered through SEF to preserve their fertility until they attain their personal and professional goals, may seem to be ideal and liberating option. However, potential women

willing to use egg freezing must undergo extensive hormonal treatment, procedures and surgeries accompanied by emotional, physical and psychological complications and adverse side effects. The posts shared by the patients illustrates IVF painful, lengthy process which also deprives them of freedom, peace in their lives as opposed to rhetoric of reproductive freedom and control the technology promised to provide.

Racial and ethnic disparities in egg freezing and IVF reproduction are a predominant concern in the promotion and advertising of SEF by most of sample clinics. Sixteen fertility companies out of total 20 sample size in this research use mostly white babies' images on the home page of their website and social media when advertising ARTs. They mostly display photos of the babies of white, Latino or Asian ethnicity but very few photos of Black babies. The companies such as Kindbody, Extend Fertility and Fertility Hope do not use any baby image to advertise egg freezing and IVF techniques. Such result has been also identified by previously conducted empirical research, which determined that 63 percent of totally three hundred fertility clinics use the image of only white babies on the home page of their websites and only 1 percent of black, Asian or Latino babies' images. Ji Hawkins elaborates on halo effect deployed by the fertility clinics in the research suggesting that the clinics purposefully use the race of babies in their ART advertising to draw in white patients. Hawkins concludes that the clinics by using the white babies images psychologically manipulate white people's minds and impact their decision as people are inclined to like people who are similar to them which is called a halo effect (Daar 2017, p. 98-99).

The research presented at the 75th ASRM Congress showed that although there had been a slight increase in the use of reproductive technologies among African American, significant racial disparities still exist. Said Amy Sparks, the president of Society for Assisted Reproductive Technology (SART) commented on the racial disparity in ART use at the congress by stating that the "race or zip code of a patient should not be a factor in their health outcomes" ("Racial Disparities in Fertility" 2019).

Commodification of young women's eggs, namely egg donation is a fast-growing sector by fertility companies in the market. Donor egg practice is most often used for women who fail to become pregnant after multiple cycles of IVF, those with gynecological medical conditions, older than reproductive age such as above 43 and transgender people. Seventeen fertility companies out of overall sampled 20, offer donor egg and sperm, embryos, surrogacy services to customers/patients, and only 3 companies (Extend Fertility, IVF Hawaii, Fertility Hope) do not have any information on their website, nor on social network about provision of egg donation and surrogacy services. Judith Daar argues that the reason for the widespread use of donor eggs, despite its high cost, is not related to a consumer demand for all requested characteristics of a baby conceived from donor eggs, but effect of fresh donor eggs on high pregnancy success rate. Overall, a woman using fresh donor eggs (nonfrozen) has 56 percent chance of delivering a live birth (Daar 2017, p. 61). Fertility companies recruit egg donors according to certain traits and characteristics such as with good education, intelligence, athletic appearance, with no crime records, young and white. The companies recruit egg donors from the same city where their centers and clinics are located, presumably for egg donor to be able to arrive any time their eggs are required to be retrieved and gestated before implanting into recipient's body. The images of young, beautiful, educated and white girls pictured as egg donors on the websites of the fertility clinics confirm once again presence of race, class, ableism, ethnicity in reproductive technology used by the fertility companies for egg donation service. They offer attractive bonus and



financial compensation to young women eligible for egg donation. For example, Washington Fertility offers the interested donors \$50.00 Amazon Gift Card, compensation once accepted into the donation program as well as payment between \$5,000.00-\$10,000.00 per donation. Additionally, if egg donor refers a friend to the center and she is approved, egg donor receives additional \$500.00 if her friend completes donation cycle <https://www.washingtonfertility.com/blog/egg-donors-earn-up-to-350-additional-compensation-with-washington-fertility-center>. Or Pacific Fertility Center offers 10,000\$ to egg donors for completing a donor cycle. Egg donation is a growing, commercialized and unregulated sector in fertility industry in the US. Young women especially those wanting to pursue their education and establish career are lured with attractive bonus, and compensation packages by fertility clinics to sell out their eggs without much thinking about medical and emotional risks associated with hormone treatment and egg retrieval process. Nationwide today, young women particularly female students get recruited and paid around \$5,000 to \$8,000 per donation cycle. Egg Donors must be healthy females between the age of 20-32, have a BMI between 20-39, and must not be active smokers. The enrolled patients with egg donor banks are provided with complete information about egg donors, as well as their medical, genetical and psychological screening reports. Cynthia R. Daniels and Erin Heidt- Forsythe in their research on human gamete donation suggest that the unregulated reproductive technologies produced "a form of gendered eugenics that compromises choice for donors and exacerbates hierarchies of human value based on stratified norms of race, ethnicity, economic class, and gender" (Daniels and Heidt-Forsythe 2012 p.720). Race and ethnicity manifest itself with egg donation than with sperm donors, there is an overrepresentation of whites and Asian Americans in the egg donor (p. 730). The recipient patients do not only buy donor eggs but also using genetic screening technology, can assess embryos with the most desirable genetic traits before it is born, and 'imperfect' samples with predicted 'undesirable' characteristics are discarded. Eighteen fertility companies participating in my research out of 20, except IVF Hawaii and Fertility Hope companies, offer genetic screening technique called PGD (Pre- Genetic Diagnosis) before implantation of embryos into recipient's uterus. PGD technique does not only define sex of a baby but also determines if an embryo contains a normal number of chromosomes, genetic disorders or any embryonic anomalies. Some fertility companies depict this genetic screening practice as an insurance or guarantee for perfect babies, a "protection" or "peace of mind" about successful live births. The tendency to offer PDG as guarantee for perfect babies and successful live birth rate as marketing strategy widely used by fertility companies raises bioethical and eugenics concerns. Mary Mahowald, a professor in the Department of Obstetrics and Gynecology at the University of Chicago argues that this practice [genetic screening] is of eugenics nature although we do not name it that way. Mahowald expands more on it by noting that availability of abortion, prenatal, and pre pregnancy diagnosis techniques "contribute to the notion that people not only ought to be able to determine when to have children, and how many to have, but also just what kind of children to have" (Kimbrell 1995, p.5-6). The disability critiques oppose the application of genetic screening of embryos for disabilities as an eugenics practice that impact societal attitude towards children born and living with disabilities not compliant with norm of being 'perfect' children and regarded "as second-class citizens of the human species" (Daar 2017, p. 147).

The fertility companies offer donor eggs, sperm or surrogacy services for individuals and couples of various gender identities to have a child. The companies portray these fertility options for transgender people as an 'option', 'choice', 'opportunity' to build, grow family, achieve the dream of parenthood, and as a modern form of family building. Moreover, some of the fertility

companies, in their advertisements on fertility options for LGBT patients, hint at legal barriers that potential clients may face when adopting a child or obtaining parental rights for a child conceived through ART. Some fertility centers offer legal advice or option to refer transgender patients to competent legal counselors and alert potential patients about barriers to access insurance coverage for infertility treatment, such as for same sex couple, lesbian or single women. California IVF on its website warns the potential homosexual patients willing to have a baby by means of ARTs about the legal issues when it comes to parental right and offer various options on how legally retain right over a child. Although the fertility clinics offer advice about options how to obtain parental right, they also note that there is no guarantee when it comes to their parental rights. On the other hand, some insurance companies do not provide medical coverage of fertility treatment for unwed women and lesbians. According to the study conducted by the Stanford University researcher, lesbian patients face biased attitude and discrimination by health care providers (Daar 2017, p. 163). Dr. Paula Amato, associate professor of obstetrics and gynecology at Oregon Health & Science University points out the discriminatory policies of insurance companies, especially regarding the use of the clinical definition of infertility in the case of same-sex couples or single women. "In my opinion, it's unfair because they are treating same-sex couples differently from heterosexual couples," Dr. Amato said. "Same-sex couples have to pay for the 12 or six months of trying on their own. The insurance companies are making a distinction between what they would call 'medical infertility' and 'a medical problem for lack of a male partner'" (Fairington 2015). The ASRM Ethics Committee changed its stance in 2006 regarding parenting concerns by single parents and LGBTQ people, stating that "there is no persuasive evidence [in the social science literature] that children raised by single parents or by gays and lesbians are harmed or disadvantaged by that fact alone" and urged medical practitioners to accept patients "without regard to marital status or sexual orientation" ("LGBTQIA Reproductive" 2020).

Despite the images of individuals and couples of diverse gender identity and sexuality displayed by fertility companies, the language of the ad messages, promotional materials, and patients' testimonials still fail to be inclusive or gender neutral. The fertility companies use the words such as *women*, *moms*, *couples* mostly referring to heterosexual couples instead of keeping the language rather general such as *patients* while advertising their fertility services which may be distressing for gender non confirming people and discourage this group of potential patients to benefit from these services to exercise their reproductive rights.

The language of SEF promotion and advertising by the fertility clinics is persuasive rather than informative, it intends to persuade women to use SEF to stop their ticking biological clock, preserve their fertility and take control of their future fertility. Very few clinics warn that SEF is not a guarantee for childbearing, provide information about health complications during hormone treatment, the procedure for extracting eggs, and provide very brief information about the success rate of IVF in live births. Majority of the fertility clinics still ignore recommendation by the Ethics Committee of ASRM to provide women with information about efficacy, safety, benefits, and risks of SEF, including the unknown long-term health effects for offspring. Five companies out of totally 20 clinics participating in this study, such as Reproductive Resource Center (RRC), Kindbody, Extend Fertility, Pacific Fertility and Washington Fertility Center provide basic information about what to do with leftover embryos or unfrozen eggs. None of the fertility companies provide any rule or procedure about how patients financial, emotional and mental damages are resolved in the event of an unsuccessful pregnancy or childbirth which raises ethical concerns. Another concern about messages the fertility companies advertise about

frozen eggs is uncertainty about viability period of frozen eggs. There is no sufficient data available yet about viability period of frozen eggs as stated by ASRM, which is ignored by fertility companies that promise women to be “patient” and take time until they find partner to procreate child from their frozen eggs.

Like cost, the geography of the fertility centers makes it difficult for all women to access this fertility technology and treatment. Fertility clinics seem to be primarily located in or close to major cities, where incomes tend to be higher. In order to attract potential customers, the employees of large corporations, fertility companies chose the location that will gain them more customers as well as profit. Judith Daar argues that geographical distribution of ART centers does not provide equal access to everyone who could benefit from their services but rather clustered in areas to attract mostly middle, and upper-middle class patients (Daar 2017 page 96). There is a scholarly speculation about the role of race and ethnicity to clinic location, relationship between clinic location and stratified access along racial and ethnic lines (Daar 2017 page 97).

### CONCLUSION

Egg freezing technique has a potential to provide women with reproductive freedom, enhance their reproductive choice and option to preserve their fertility while they pursue their educational, career or personal aspirations. It provides transgender people with the family building options, helps couples or individuals suffering from the infertility problem to realize their dreams to have children and strengthen their families. It provides women with an option to take control over their reproductive destiny and releases them from anxiety of having to choose between family and career. However, not all women have the privilege to access and afford this expensive and sophisticated reproductive technology to make their reproductive choice and treat their fertility problem with. Even if they had financial resource to freeze their eggs to have their biological children at later time, main concern that remains unaddressed is how they would afford to raise and parent their children. Thus, the empowering messages and feminist rhetoric of freedom and choice used by the fertility companies to promote this reproductive technology obscure social, economic, systemic and structural inequalities that limit reproductive choice for many women and people of diverse gender identities. This technology provides an individual solution but not systemic support which could allow women to exercise their reproductive right to conceive and raise their children, for example provision of paid parental or maternal leave, childcare services, comprehensive health insurance, suitable working conditions and policies. Reproduction through reproductive technologies provides women with individual liberty and choice over their reproductive capacity, but also overshadows social and reproductive injustice issues within a larger socioeconomic and political context in which “reproduction is stratified between privileged and marginalized populations” (McGowan 2013, p.6). Insurance companies covering IVF may expand access of the marginalized women to procreate and treat their infertility by means of ARTs. Currently only 17 states have fertility insurance coverage laws, and seven states have fertility preservation laws. The rhetoric of option, reproductive autonomy and choice also overshadows potential medical complications, physical and psychological risks associated with SEF/IVF procedures. SEF is an invasive technique that includes intensive hormone injections, extended treatment, and surgical procedures to extract eggs followed by adverse short-term and long-term side effects. The for profit and unregulated fertility industry that provides egg freezing technique still ignores ASRM’s recommendation to provide potential patients with thorough information about unforeseen medical complications that may occur during hormone treatment and egg retrieval, pregnancy, unknown long term health risks to

offspring and complications with pregnancy at advanced reproductive age due to uncertainties with this procedure (Daar et al.2018). The fertility companies studied for this research also do not provide information about their clinic-specific statistics, success rate of thawed eggs, live birth, policies with leftover embryos and unthawed eggs. Only very few fertility companies in this research project provide briefly about what to do with embryos and unfertilized eggs. They also do not provide data or evidence on viability of frozen eggs which contradicts ASRM warning about lack of data about how long frozen eggs may still be viable upon use. There are many ethical issues that are unaddressed in the fertility industry raise concern about possible health, financial, emotional and moral harms done to patients as a result of this procedure. In addition, the extensive commercialization of this reproductive technology creates a sense of anxiety and urgency among women to freeze their eggs as an option for later reproductive use, as a solution to the problem of infertility. Moreover, it reinforces the notion of procreation responsibility of women and SEF as an option to fulfill this responsibility. Infertility as major common theme emphasized by fertility companies in promotion of SEF, reinforces gender norms and heteronormative family formation rather than providing equal access across all gender and sexualities to this reproductive technology. The images and language the fertility companies use for commercial of SEF, mainly display images of women, and couples, mostly heterosexual, which may restrain access of those transmasculine, transgender people or individual males to this technology to have a child. Offering PDG technique by fertility companies can provide women or future couples the opportunity to choose and decide on the reproductive process, but it also raises ethical issues regarding manipulation of childbirth through technology and the question of which society these selective reproductive technologies are pushing us to.

More research is needed to conduct on exploitation of women's reproductive tissue by egg banks and fertility companies, especially in terms of potential risks of reproductive technique and procedures to the health of female egg donors. There are not enough studies done so far that explore the short-term and long-term medical complications of hormone treatment that women patients and egg donors are exposed to before egg retrieval and the risks associated with egg retrieval surgeries.

Due to the growing number of employer companies offering fertility coverage to their employees, it is necessary to examine further the economic motives and relationships between the private fertility companies, employers and insurance companies involved in egg freezing market. Currently, the fertility industry providing egg freezing gets more attention by large investors as a profitable area, therefore, more studies are needed to explore commodification of women's bodies and reproductive tissue. During the study, I could not find much information or studies conducted about access to reproductive technologies and services, especially by marital status and sexual orientation. Therefore, much studies need to be conducted to examine fertility clinics receptivity to serving lesbian and single women, any obstacle that this group of people encounter such as with health insurance and obtain parental rights. Moreover, the intensive use of PGD for medical reasons raises concern about ethical issues and eugenics deployed by the fertility clinics in the application of Selective Reproductive Technologies (SRTs) to prevent births of children who would have disabilities, needs to be examined more within disability rights and reproductive justice framework whether these technologies (IVF-PGD) reinforce societal discrimination against people with disability or enhances reproductive choice of women.

### LIST OF ACRONYMS USED

ASRM- American Society for Reproductive Medicine  
SEF-Social Egg Freezing (egg freezing for non-medical reasons)  
Oocyte Cryopreservation (OC) or Egg Freezing  
IVF-In Vitro Fertilization  
ART-Assisted Reproductive Technology  
SRTs-Selective Reproductive Technologies  
PGD-Pre-Implantation genetic testing

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