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Ovarian Tissue Cryopreservation: A Window into the Reproductive Justice Concerns Underlying Assisted Reproductive Technologies

Caitlyn Pesavento

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Comment

Ovarian Tissue Cryopreservation: A Window into the Reproductive Justice Concerns Underlying Assisted Reproductive Technologies

CAITLYN PESAVENTO

More regulatory framework is needed for assisted reproductive technologies. Taken together, the high costs of fertility treatment, lack of widespread insurance coverage, and social perceptions of motherhood make it nearly impossible for women from traditionally marginalized backgrounds to collectively overcome barriers of access to fertility treatments. Viewing the ovarian tissue cryopreservation procedure through a reproductive justice framework illustrates an inherent dichotomy between increasing availability and increasing access to assisted reproductive technologies. This Comment explores the current regulation—or lack thereof—of assisted reproductive technologies; advocates for the regulation of ovarian tissue cryopreservation by the U.S. Food and Drug Administration; scrutinizes the failings of the insurance industry’s coverage of infertility treatments; and exposes a common ideology that a woman’s social worth is intimately linked to her reproductive capabilities and destined motherhood.

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Ovarian Tissue Cryopreservation: A Window into the Reproductive Justice Concerns Underlying Assisted Reproductive Technologies

CAITLYN PESAVENTO *

INTRODUCTION

Ovarian tissue cryopreservation (OTC) is now one of many assisted reproductive technology (ART) treatments available to combat infertility. OTC can efficiently preserve hundreds of primordial ovarian follicles in one retrieval process.¹ This technique has primarily been used to safeguard fertility in cancer patients undergoing gonadotoxic treatments and may also be useful for patients with conditions such as recurrent ovarian cysts, ovarian torsions, endocrine disorders, and autoimmune diseases.² The American Society for Reproductive Medicine's (ASRM) recent removal of OTC's experimental label will likely give more women the ability to treat infertility,³ but it will not increase the number of women who can access fertility treatments.

An inherent dichotomy exists within the scientific advancements of ARTs. On the one hand, emerging ARTs should be celebrated for their fertility treatment capacities. Yet, on the other hand, new technologies alone will not solve reproductive justice issues that lie in the shadows of reproductive regulation and its insurance coverage—or lack thereof. Looking at OTC as a case study for the intersection of these tensions

* University of Connecticut School of Law, J.D. Candidate, 2022; University of Connecticut, B.A., 2020, B.S., 2020. Thank you to my sister, Danielle, for inspiring my advocacy; my parents, Antoinette and Bruno, for their love and support; Austin Carfi for always championing me and my ambitions; my colleagues at the *Connecticut Law Review* for their editorial efforts; and Professor Richard Michael Fischl for his unwavering belief in me.

¹ Sanghoon Lee, Sinan Ozkavukcu & Seung-Yup Ku, *Current and Future Perspectives for Improving Ovarian Tissue Cryopreservation and Transplantation Outcomes for Cancer Patients*, 28 REPROD. SCI. 1746, 1747 (2021).

² Ellen Cristina Rivas Leonel, Carolina M. Lucci & Christiani A. Amorim, *Cryopreservation of Human Ovarian Tissue: A Review*, 46 TRANSFUSION MED. & HEMOTHERAPY 173, 174 (2019). Gonadotoxic treatments are those that damage the reproductive system through the destruction of sperm and eggs. *Fertility Risks from Treatment*, ALL. FOR FERTILITY PRES., <https://www.allianceforfertilitypreservation.org/fertility-risks-from-treatment> (last visited Nov. 2, 2021).

³ The ASRM published its removal of the experimental label in March of 2020. Erin E. Rowell, Francesca E. Duncan & Monica M. Laronda, *ASRM Removes the Experimental Label from Ovarian Tissue Cryopreservation (OTC): Pediatric Research Must Continue*, AM. SOC'Y FOR REPROD. MED.: FERTILITY & STERILITY (Mar. 26, 2020), <https://www.fertstertdialog.com/posts/asrm-removes-the-experimental-label-from-ovarian-tissue-cryopreservation-otc-pediatric-research-must-continue>.

illustrates how abstract concepts, such as motherhood, reproductive justice, and socioeconomic status, impact ART procedures for women.⁴

This Comment explores the current regulation of ARTs and the potential regulation of ovarian tissue procedures, the lack of access to ARTs from an insurance coverage perspective, concerns for the nonmedically necessary use of OTC, and the intersection of social identity and reproduction.

I. FEDERAL REGULATION OF REPRODUCTIVE CRYOPRESERVATION

There is no comprehensive federal law relating to ARTs,⁵ and state regulation of private fertility clinics and gamete banks is lacking.⁶ OTC should—and likely will—be regulated alongside tissue transplants under the Food and Drug Administration (FDA), rather than with organ transplants under the U.S. Department of Health and Human Services (HHS). When the FDA promulgated regulations for cell and tissue donations, it included gamete donations as one type of covered cell.⁷ Despite this, extensive regulation of reproductive cell and tissue transplants still falls short.⁸ As a result, state and federal legislatures will continue to grapple with this issue, and even more so with ovarian tissue transplants.

In 2007, the FDA enacted eligibility regulations for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products (HCT/Ps).⁹ Gamete donations were explicitly included as covered HCT/Ps under the regulation.¹⁰ As a result, oocyte and sperm donations are now regulated under 21 C.F.R. § 1271.3(d).¹¹ If the FDA explicitly includes ovarian tissues as HCT/Ps under their cell and tissue regulation, OTC will be regulated similarly to egg donation procedures. However, the FDA's guidance does little to regulate access or availability to procedures that use HCT/Ps, which are the ARTs

⁴ Although scientific literature has historically used the term “women” to refer to cisgender females, these processes may impact a larger group of individuals than the term suggests.

⁵ Maya Sabatello, *Regulating Gamete Donation in the U.S.: Ethical, Legal and Social Implications*, 4 LAWS 352, 353 (2015).

⁶ Sabatello, *supra* note 5. Generally, somatic cells are all the cells of the body except for the germ line, consisting of gametes. Shawn Burgess, *Somatic Cells*, NAT'L HUM. GENOME RSCH. INST., <https://www.genome.gov/genetics-glossary/Somatic-Cells> (last visited Nov. 2, 2021). Gametes are the cells in sexual organs that produce sperm and eggs. *Id.* Thus, any cell that is not involved in the production of sperm or eggs is a somatic cell. *Id.*

⁷ Sabatello, *supra* note 5.

⁸ Chloe Nelson, *No Payment, No Procreative Liberty: The Case Against Restrictions and Prohibitions on Payment for Gametes* 11 (Seton Hall Univ., Law School Student Scholarship No. 1179, 2021), https://scholarship.shu.edu/cgi/viewcontent.cgi?article=2180&context=student_scholarship.

⁹ Sabatello, *supra* note 5.

¹⁰ *Id.*

¹¹ 21 C.F.R. § 1271.3(d) (2020).

themselves. Instead, its guidance merely imposes safety and administrative guidelines for health institutions performing HCT/P procedures.¹²

Under C.F.R. Part 1271, Subpart C, medical clinics are required to screen and test cell and tissue donors to prevent the introduction, transmission, or spread of communicable diseases.¹³ Nonetheless, there are exceptions. Most reproductive gamete donations qualify for an exception under the testing and screening requirements because they are (1) cells being placed back into the patient from which they were first harvested, (2) reproductive cells or tissues donated by a sexually intimate partner, or (3) cryopreserved material not previously tested.¹⁴ The third exception addresses situations where the donor of cryopreserved reproductive cells or tissues has subsequently become infertile.¹⁵ In this category, the FDA distinguishes between cryopreserved cells/tissues and cryopreserved embryos.¹⁶ However, there is no mention of cryopreservation outside of the reproductive context.¹⁷

There are three reasons the FDA, rather than HHS, should regulate OTC. First, the OTC procedure can ultimately lead to pregnancy, which arguably ties it to a “basic human right: the right to or not to reproduce.”¹⁸ As the social sphere surrounding reproductive access and autonomy can be contentious and politically charged, HHS may be reluctant to include ovarian tissue in its organ donation regulations.¹⁹

Second, ovarian tissue does not have to be stimulated prior to cryopreservation,²⁰ making it a viable option for patients who cannot defer fertility treatment. In these cases, it would be unreasonable to require recipients to register under the Organ Procurement and Transplantation

¹² Among other things, Title 21 of the Code of Federal Regulations, Part 1271, instructs clinics on HCT/P registration, donor eligibility requirements, current good tissue practice requirements, and reporting and labeling requirements. *See id.* § 1271.1(b) (describing the scope of the regulation).

¹³ *Id.* § 1271.45(b).

¹⁴ *Id.* § 1271.90(a)(1)–(3).

¹⁵ *Id.* § 1271.90(a)(3)(i).

¹⁶ *Id.* § 1271.90(a)(3)–(4).

¹⁷ *Id.* § 1271.90(a)(4)(b).

¹⁸ Lisa Campo-Engelstein, *Gametes or Organs? How Should We Legally Classify Ovaries Used for Transplantation in the USA?*, 37 J. MED. ETHICS 166, 169 (2011).

¹⁹ *See id.* at 168 (“[T]hat reproductive healthcare continues to remain marginalised, in part because it is so politically charged, may make the government and UNOS reluctant to include [OTC].”) (footnotes omitted). The United Network for Organ Sharing (UNOS), which regulates organ donations, is under contract with HHS. *UNOS Wins Contract to Continue as National Transplant Network*, UNITED NETWORK FOR ORGAN SHARING (Nov. 7, 2018), <https://unos.org/news/unos-wins-contract-to-continue-as-national-transplant-network/>.

²⁰ Camille Ladanyi et al., *Recent Advances in the Field of Ovarian Tissue Cryopreservation and Opportunities for Research*, 34 J. ASSISTED REPROD. & GENETICS 709, 711 (2017).

Network waitlist, which HHS requires for organ transplant patients,²¹ due to the often time-sensitive nature of OTC's use.

Third, and significantly, in the context of gamete and embryo donation, donors, recipients, and fertility programs “have a unique and ongoing moral relationship” with one another.²² Organ donations under HHS are heavily regulated.²³ If ovarian tissue donations are similarly regulated, reproductive liberties could potentially be encroached upon.²⁴ Such regulation has the potential to open a “Pandora’s box” of even more government intrusion into the hypothetical right to, or not to, reproduce.²⁵ Any legislative or administrative framework also risks restricting access to those who conform to the heteronormative family ideal.²⁶

Some scientists view stem cells as having the potential to play a vital role in future infertility treatments.²⁷ Thus, if OTC is regulated by the FDA, the FDA’s regulation of stem cell cryopreservation may foreshadow the treatment of ovarian tissue. For stem cell donors, testing and screening requirements still apply.²⁸ However, it can hardly be said that ovarian tissue is better analogized to stem cells than reproductive cells. Stem cells can indefinitely divide to produce new cells and can change into other types of cells.²⁹ The sole function of ovarian tissue, which does not have these capabilities, is to aid in oocyte production and reproductive hormone regulation.³⁰ However, the uncertainty in these distinctions could leave a gap in the legislative framework covering OTC, where ART regulation is already insufficient.

²¹ 42 C.F.R. § 121.2 (2021) (defining “transplant candidate” as someone who would benefit medically from a transplant “and has been placed on the waiting list”); *see also id.* § 121.5(b) (2021) (requiring transplant programs to place candidates on the waiting list).

²² Ethics Comm. of the Am. Soc’y for Reprod. Med., *Interests, Obligations, and Rights in Gamete and Embryo Donation: An Ethics Committee Opinion*, 111 FERTILITY & STERILITY 664, 664–65 (2019).

²³ *About Us*, HEALTH RES. & SERVS. ADMIN.: ORGANDONOR.GOV (Oct. 2021), <https://www.organdonor.gov/about-us> (“Organ and tissue donation and transplantation are among the most regulated areas in health care.”).

²⁴ Campo-Engelstein, *supra* note 18, at 168.

²⁵ *See generally* Angeline Faye Schrater, *Pandora’s Box: Feminism Confronts Reproductive Technology*, 5 REPROD. HEALTH MATTERS 187, 189 (1997) (reviewing NANCY LUBLIN, *PANDORA’S BOX: FEMINISM CONFRONTS REPRODUCTIVE TECHNOLOGY (1998)*) (noting that “[w]hen the government and/or the medical profession view the fetus as a separate person, pregnant women lose personal autonomy and are considered either incompetent or the enemy of the fetus”).

²⁶ Jill Allison, *Enduring Politics: The Culture of Obstacles in Legislating for Assisted Reproduction Technologies in Ireland*, 3 REPROD. BIOMED. & SOC’Y ONLINE 134, 136 (2016).

²⁷ Jing Wang et al., *Stem Cells as a Resource for Treatment of Infertility-Related Diseases*, 19 CURRENT MOLECULAR MED. 539, 540 (2019).

²⁸ *How Are Stem Cells Regulated?*, ASS’N FOR THE ADVANCEMENT OF BLOOD & BIOTHERAPIES, <https://www.aabb.org/news-resources/resources/cellular-therapies/facts-about-cellular-therapies/how-are-stem-cells-regulated> (last visited Nov. 24, 2021).

²⁹ Yvette Brazier, *What Are Stem Cells, and What Do They Do?*, MED. NEWS TODAY (Oct. 19, 2018), <https://www.medicalnewstoday.com/articles/323343#sources>.

³⁰ *Evaluating Ovarian Function*, PACIFIC FERTILITY CTR., <https://www.pacificfertilitycenter.com/infertility-diagnosis/evaluating-ovarian-function> (last visited Nov. 24, 2021).

II. INSURANCE COVERAGE IMPLICATIONS

In addition to legislation, ARTs are indirectly regulated through insurance coverage classifications.³¹ Despite the increasing usage of fertility treatments, only twenty-five percent of employers provide insurance coverage for ARTs.³² Moreover, women with a lower socioeconomic status are less likely to have insurance plans that cover or offer to cover ARTs.³³ Neither Medicare nor Medicaid provides insurance coverage for infertility or in vitro fertilization (IVF).³⁴ Private insurances occasionally include IVF coverage in their plans, but some exclude the hormonal IVF stimulation medication itself.³⁵ Unfortunately, under this framework, it is improbable that OTC would fall under ART coverage because neither eggs nor sperm are used. Nevertheless, for the reasons stated above, OTC should fall under the definition of ARTs for insurance purposes, especially if regulated by the FDA.

Even in states that do provide comprehensive coverage for ARTs, there is an additional hurdle of overcoming the definition of “infertility.”³⁶ Infertility, which affects approximately 6.1 million Americans, is defined as “a disease of the reproductive system that impairs the body’s ability to perform the basic function of reproduction.”³⁷ Here, when used prior to a gonadotoxic treatment, OTC could be used proactively to preserve one’s fertility for later use, thus falling out of the definition. This problem is not unique to OTC, as women who proactively freeze their eggs prior to any additional fertility treatment are also exposed to this same pitfall. Where IVF

³¹ Jessica L. Hawkins, Note, *Separating Fact from Fiction: Mandated Insurance Coverage of Infertility Treatments*, 23 WASH. U. J.L. & POL’Y 203, 224 (2007).

³² *Id.* at 204. In some states, employers are not obliged to provide insurance coverage for fertility treatments to employees, even when coverage options are available to the employer. *See, e.g., Yeager v. Blue Cross of Cal.*, 96 Cal. Rptr. 3d 723, 728 (Cal. Ct. App. 2009) (contrasting home healthcare insurance coverage requirements with the lack of legislative mandate regarding infertility coverage).

³³ Madeline Curtis, Note, *Inconceivable: How Barriers to Infertility Treatment for Low-Income Women Amount to Reproductive Oppression*, 25 GEO. J. ON POVERTY L. & POL’Y 323, 335 (2018).

³⁴ *Your Employer and Your Options*, RESOLVE: THE NAT’L INFERTILITY ASS’N, <https://resolve.org/learn/financial-resources-for-family-building/insurance-coverage/getting-insurance-coverage-at-work/your-employer-and-your-options> (last visited Mar. 30, 2022).

³⁵ Monica Fike, *5 Questions to Ask When You’re Considering Infertility Treatment*, AETNA, <https://www.aetna.com/health-guide/5-health-care-questions-ask-infertility-treatment.html> (last visited Nov. 24, 2021).

³⁶ *Fertility and Insurance*, LIVESTRONG, <https://www.livestrong.org/we-can-help/fertility-services/fertility-and-insurance> (last visited Nov. 26, 2021) (“[T]here is a loophole in the definition of infertility that can exclude cancer patients. [One] may be denied coverage because [they] do not meet the strict criteria of the definition of infertility.”); *see, e.g., Daniel Basco, Lisa Campo-Engelstein & Sarah Rodriguez, Insuring Against Infertility: Expanding State Infertility Mandates to Include Fertility Preservation Technology for Cancer Patients*, 38 J. L. MED. & ETHICS 832, 832 (2010) (“Because of [the ASRM’s standard medical definition of fertility], even if Melanie had lived in a state where insurance companies were mandated to pay for services to treat infertility through [ARTs], she would not have qualified under this mandate to access fertility preservation treatments prior to undergoing treatment for her cancer.”).

³⁷ Hawkins, *supra* note 31, at 205.

is not covered by insurance or where there is no comprehensive coverage offered, it is unlikely that there will be coverage for OTC. It is problematic that the fate of OTC regulation and coverage—like infertility coverage—is likely to be a political question rather than a clinical categorization.³⁸ When OTC becomes widely available for nonmedically necessary use, this will add to the complexity of providing access to those who need OTC treatment for medical reasons.

Due to the high costs of fertility treatment, finances, rather than medical necessities, are the driving factor in reproductive choice and access.³⁹ The United States has the most expensive ARTs in the world, resulting from the high cost of healthcare and the lack of support for ART treatments in states without ART insurance mandates.⁴⁰ Without widespread insurance coverage, it is unlikely that more women will have access to ARTs regardless of the new technologies that become available. The cost of egg freezing alone can fall between \$15,000 and \$20,000 per cycle, depending on geographic location.⁴¹ To subsequently use frozen eggs, women traditionally need to implant fertilized embryos through IVF, which adds approximately \$11,000 to the cost.⁴² While not medically necessary, it is highly recommended that patients take medications that increase the chances of a successful transfer, which can cost anywhere from \$5,000 to \$8,000 more.⁴³ In addition, many women need to do multiple egg freezing cycles to feel confident that the number of eggs stored will be sufficient to lead to a successful pregnancy,⁴⁴ which further increases the cost of these procedures. In total, the entire process can take many years and cost up to \$40,000.

Even without comprehensive insurance coverage, OTC may drastically

³⁸ Patricia Stapleton & Daniel Skinner, *The Affordable Care Act and Assisted Reproductive Technology Use*, 34 POL. & LIFE SCIS. 71, 80 (2015).

³⁹ Hawkins, *supra* note 31, at 204; Stapleton & Skinner, *supra* note 38, at 75 (“[T]he choice to pursue ART . . . is highly influenced by income.”); *see also* Kinzie v. Physician’s Liab. Ins. Co., 750 P.2d 1140, 1141–42 (Okla. Civ. App. 1987) (holding that an infertile woman’s IVF procedure was not covered by her insurance policy because it did not cure or reverse her infertile condition and therefore was not “medically necessary” as required under the policy).

⁴⁰ Georgina M. Chambers et al., *The Impact of Consumer Affordability on Access to Assisted Reproductive Technologies and Embryo Transfer Practices: An International Analysis*, 101 FERTILITY & STERILITY 191, 196 (2014) (noting that “[o]ne fresh IVF cycle accounts for 52% of an individual’s average disposable income in states without ART insurance mandates”).

⁴¹ Jamie Grifo, *Egg Freezing: The Costs of Egg Freezing*, FERTILITYIQ, <https://www.fertilityiq.com/egg-freezing/the-costs-of-egg-freezing#breaking-down-the-likely-costs> (last visited Nov. 26, 2021) (including the cost of treatment, medication, and around five years of storage).

⁴² *How Much Does It Really Cost to Freeze Eggs?*, CNY FERTILITY, <https://www.cnyfertility.com/egg-freezing-cost> (Oct. 12, 2020) (including monitoring, egg thawing, fertilization, and egg transfer in the cost calculation).

⁴³ Speaking of Psychology, *Bonus Episode: Debunking Myths About Fertility with Angela Lawson*, PhD, AM. PSYCH. ASS’N (Sept. 4, 2019), <https://www.apa.org/research/action/speaking-of-psychology/fertility>.

⁴⁴ *How Much Does It Really Cost to Freeze Eggs?*, *supra* note 42.

reduce the costs associated with ART treatments. Ovarian tissue removal costs are estimated to be about \$10,000, with ovarian tissue preservation prices similar to egg preservation storage prices.⁴⁵ With egg freezing, OTC patients do not need hormonal stimulation medication before the retrieval process, and multiple retrieval cycles are presumably not needed.⁴⁶ Although there are costs associated with the transplant component of OTC,⁴⁷ it is unlikely that this cost will compare to that of IVF.

Most newly diagnosed cancer patients, like those who are currently eligible for OTC, do not meet the definition of infertility.⁴⁸ The critical distinction between OTC and other ARTs is that fertility in OTC recipients can come and go, while most ART treatments are used when fertility is no longer at play. In cases where gonadotoxic treatment, such as cancer treatment, eliminates a woman's fertility, a subsequent ovarian tissue transplant can stimulate follicle growth and revive it. This unique feature may lead insurance companies to offer some coverage for the transplant procedure but not for the retrieval and storage costs. For adults faced with this decision, patients may be forced to choose between delaying treatment, in order to fit the infertility definition and afford the first part of the OTC process, and receiving treatment, which comes with its own set of additional costs. Although patients can later pursue insurance appeals for procedure costs, patients may be unaware of the appeals process or these processes may simply be too complex to navigate.⁴⁹

III. CONCERNS FOR FUTURE ELECTIVE OTC USE

In 2014, the ASRM noted that OTC should not be offered for the sole purpose of delaying childbearing, outside of a nonessential context, due to the procedure's experimental nature.⁵⁰ It remains to be seen whether the ASRM will now draw a distinction between elective cryopreservation for eggs and elective cryopreservation for ovarian tissue.

Although increasing access to fertility-preserving techniques is, and should be, encouraged, specific concerns arise in the context of elective ART

⁴⁵ *Fertility Preservation Options for Women*, LIVESTRONG, <https://www.livestrong.org/we-can-help/fertility-services/fertility-preservation-options-women> (last visited Nov. 26, 2021).

⁴⁶ See Rowell et al., *supra* note 3 (noting that the surgical procedure itself includes "thinning the ovarian tissue while removing the medullary region . . . and preserving the cortical region").

⁴⁷ See Mindy Christianson, *Ovarian Tissue Freezing (Cryopreservation)*, JOHNS HOPKINS MED., <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/ovarian-tissue-freezing-cryopreservation> (last visited Nov. 26, 2021) (stating that "[t]here is a charge for the tissue-harvesting procedure, freezing and storage, as well as for the transplantation procedure when the person wishes to become pregnant").

⁴⁸ *Fertility and Insurance*, *supra* note 36.

⁴⁹ *Id.*

⁵⁰ The Prac. Comm. of the Am. Soc'y for Reprod. Med., *Ovarian Tissue Cryopreservation: A Committee Opinion*, 101 FERTILITY & STERILITY 1237, 1240 (2014).

procedures. It is unclear whether courts would recognize a positive right to the financial assistance needed to become a parent,⁵¹ but, generally, they have not recognized a blanket right to reproduce.⁵² As a result, some believe that “rich people reproduce better than poor people.”⁵³ In the United States, as of 2010, non-Hispanic white women were approximately twice as likely as both Hispanic women and non-Hispanic Black women to have used ARTs.⁵⁴ Even in states that provide comprehensive insurance coverage for ARTs, most of the individuals who access those services are white, highly educated, and high-income earning women.⁵⁵ Women of color bear disproportionate financial and emotional burdens associated with infertility treatment.⁵⁶ As Hispanic and Black women are more likely to experience infertility than white women,⁵⁷ this discrepancy highlights how access to reproductive technologies falls short for certain marginalized groups of women. Without comprehensive insurance coverage, it is extremely unlikely that the reduced out-of-pocket costs of OTC will help break down existing barriers to reproductive technology access.

Putting costs aside, the largest difference between the ovarian tissue harvesting in OTC and the egg retrieval process in egg freezing is time. Unlike with egg harvesting, which involves rounds of hormone therapy *before* retrieval and a post-operation recovery, ovarian tissue retrieval only has a post-operation recovery period.⁵⁸ With doctors recommending multiple rounds of egg stimulation and retrieval, the egg retrieval process can take nearly nine months.⁵⁹ Egg retrieval also requires a hormonal stimulation

⁵¹ Curtis, *supra* note 33, at 341.

⁵² See *J.B. v. M.B.*, 783 A.2d 707, 717 (N.J. 2001) (allowing pre-embryos to be terminated against an ex-husband’s wishes, noting that the ex-wife’s “fundamental right not to procreate is irrevocably extinguished if a surrogate mother bears” the ex-husband’s child).

⁵³ Claudia Geib, *Advanced Reproductive Technology Is Here. But Who Decides Who Gets Access?*, FUTURISM (Feb. 2, 2018), <https://futurism.com/gatekeepers-future-reproductive-technology>.

⁵⁴ Molly Quinn & Victor Fujimoto, *Racial and Ethnic Disparities in Assisted Reproductive Technology Access and Outcomes*, 105 FERTILITY & STERILITY 1119, 1120 (2016) (finding that “during 2006-2010 ever using medical help to achieve pregnancy was more significantly more common among non-Hispanic white women (15%) than among Hispanic (7.6%) or non-Hispanic [B]lack (8.0%) women”).

⁵⁵ Stapleton & Skinner, *supra* note 38, at 75.

⁵⁶ Isabel Galic et al., *Disparities in Access to Fertility Care: Who’s In and Who’s Out*, 2 F&S REPS. 109, 116 (2021); Usha Lee McFarling, *For Black Women, the Isolation of Infertility is Compounded by Barriers to Treatment*, STAT (Oct. 14, 2020), <https://www.statnews.com/2020/10/14/for-black-women-isolation-of-infertility-compounded-by-barriers-to-treatment/> (noting that studies suggest that although Black women may be twice as likely as white women to struggle with infertility, they are half as likely to seek or receive infertility treatment).

⁵⁷ Curtis, *supra* note 33, at 329.

⁵⁸ OTC has an approximate five-day recovery period post-operation, similar to a tubal ligation procedure. Infertility Ctr. of St. Louis, *Ovarian Tissue Freezing for Healthy Women*, YOUTUBE, at 03:06 (Sept. 21, 2015), <https://www.youtube.com/watch?v=UgWFz3NcoMQ>.

⁵⁹ *Id.* at 02:25.

period, which is accompanied by regular doctors' visits and tests.⁶⁰ These hormonal changes often come with emotionally and physically taxing stress and mood changes.⁶¹ Routine visits and tests, in conjunction with other side effects, may also force patients to take time off from work or put aside career goals. Hence, ovarian tissue harvesting has far fewer side effects than IVF egg hormonal stimulation.

The "convenience" of the OTC procedure will likely be attractive to some working women due to its cost and efficiency. However, OTC "[a]vailability is not synonymous with equity."⁶² Working women who can elect whether they want to preserve their ovarian tissue will likely pursue OTC to delay childbearing as they age. This is consistent with the trend seen in the age gap of first-time mothers. On average, women with college degrees become mothers at age thirty, whereas women without college degrees become mothers at around age twenty-three.⁶³ It has been said that women with higher socioeconomic statuses "just have more potential things they could do instead of being a parent, like going to college or grad school and having a fulfilling career."⁶⁴ For those women (or families) who can afford egg freezing, ARTs can be viewed as a tool to advance career interests.⁶⁵ Some view giving birth and raising children as taking time, energy, and resources away from a woman's career and putting them into her family life.⁶⁶ Consequently, it is often viewed as implausible for a woman to concomitantly succeed in her career and become a mother.⁶⁷ Elective egg freezing is arguably a way for wealthy people to "get a leg up over those . . . who aren't."⁶⁸ This aligns with the ideology that fertility preservation is a solution to the "speed bump" that motherhood puts on women's careers.⁶⁹ However, this perception is not only damaging to

⁶⁰ *Your Egg Freezing Cycle*, EXTEND FERTILITY, <https://extendfertility.com/services/egg-freezing/your-egg-freezing-cycle> (last visited Jan. 12, 2022).

⁶¹ *What to Expect from Ovarian Stimulation in IVF*, ASPIRE FERTILITY: ASPIRE BLOG (Nov. 29, 2015), <https://www.aspirefertility.com/blog/what-to-expect-from-ovarian-stimulation-in-ivf>.

⁶² Allison, *supra* note 26, at 135.

⁶³ Quoctrung Bui & Claire Cain Miller, *The Age that Women Have Babies: How a Gap Divides America*, N.Y. TIMES: UPSHOT (Aug. 4, 2018) <https://www.nytimes.com/interactive/2018/08/04/upshot/up-birth-age-gap.html>.

⁶⁴ *Id.* ("Heather Rackin, a sociologist at Louisiana State University who studies fertility").

⁶⁵ Erin Gloria Ryan, *Hot New Having It All Tip: Just Be Rich Enough to Freeze Your Eggs!*, JEZEBEL (Apr. 17, 2014, 1:50 PM), <https://jezebel.com/hot-new-having-it-all-tip-just-be-rich-enough-to-freeze-1564318500>.

⁶⁶ Virginia Postrel, *Are Career and Family Incompatible?*, BLOOMBERG OP. (Sept. 19, 2021, 8:00 AM), <https://www.bloomberg.com/opinion/articles/2021-09-19/why-women-s-struggle-to-balance-family-and-career-never-ends> ("The problem is mainly—but not entirely—that children take time and careers take time and they vie for the same time.").

⁶⁷ Anastasia Belyh, *Freezing Your Eggs: A Wise Career Decision?*, CLEVERISM (Mar. 8, 2020), <https://www.cleverism.com/freezing-your-eggs-a-wise-career-decision>.

⁶⁸ Ryan, *supra* note 65.

⁶⁹ *Id.*

women who do choose to freeze their eggs, but it also reinforces the notion that women cannot “have it all”—both a family and a career. If OTC is viewed as a kind of fertility insurance, just as egg freezing is for some women, we will likely see the same reproductive access issues arise in this context.

IV. THE BIGGER PICTURE

Those struggling with infertility find that neither the Americans with Disabilities Act nor the Pregnancy Discrimination Act provides them with sufficient protection for the coverage of infertility treatment costs.⁷⁰ The importance of ART access coincides with concepts of motherhood and family, which bear heavily on women struggling with infertility.⁷¹

Regardless of the cause, women endure the burden of infertility treatment and management and the psychological and interpersonal stressors that accompany it.⁷² It has been said that the issue of establishing medical necessity for insurance coverage purposes is a broader normative question of the extent to which society prioritizes fertility.⁷³ The same could be said for the definition of infertility. Through certain customs, institutions, and norms, society reinforces the notion that bearing and rearing children are central to a woman’s worth.

Nearly ten percent of those needing gonadotoxic treatment are still in their childbearing years.⁷⁴ Proponents of OTC treatment pronounce that the remarkability of the treatment is that it allows young cancer patients to preserve their fertility.⁷⁵ This exposes an underlying message—that beating cancer is not enough. It suggests that young women need to beat cancer *so that they can become biological mothers*. This becomes inherently problematic when social perceptions of motherhood are reinforced from a young age. Some women have already decided that they want to become mothers before receiving a cancer diagnosis. But, for prepubescent girls, this

⁷⁰ Hawkins, *supra* note 31, at 214.

⁷¹ Seyede Batool Hasanpoor-Azghdy, Masoumeh Simbar & Abouali Vedadhir, *The Emotional-Psychological Consequences of Infertility Among Infertile Women Seeking Treatment: Results of a Qualitative Study*, 12 IRANIAN J. REPROD. MED. 131, 136 (2014) (discussing the impact of having children on the mental health of an infertile couple, the stabilizing effect of children on a woman’s status within her family and community, and the psychological distress associated with infertility and a woman’s inability to achieve a desired social role).

⁷² Hala Mahmoud Obeidat, Adlah M. Hamlan & Lynn Clark Callister, *Missing Motherhood: Jordanian Women’s Experiences with Infertility*, ADVANCES PSYCHIATRY, 2014, at 2.

⁷³ Stapleton & Skinner, *supra* note 38, at 83.

⁷⁴ Basco et al., *supra* note 36, at 835.

⁷⁵ See Stacy Whiteside, *What is Ovarian Tissue Cryopreservation (OTC)?*, NATIONWIDE CHILD.’S: 700 CHILD.’S (Nov. 7, 2018), <https://www.nationwidechildrens.org/family-resources-education/700childrens/2018/11/ovarian-tissue-cryopreservation> (describing the benefits of OTC); *New Research: A Fertile Future for Cancer Fighters*, ONCOFERTILITY CONSORTIUM (Aug. 25, 2010), <https://oncofertility.msu.edu/blog/2010/08/new-research-fertile-future-cancer-fighters> (noting the use of the new technique for cancer patients); *supra* text accompanying notes 1–3 (describing the benefits and uses of the OTC procedure).

issue would presumably have to be addressed, and, frankly, decided, at a very young age. This perpetuates the idea that the only way for a woman to fulfill her purpose is to become a mother, ensuring that same-sex mothers, late-in-life mothers, infertile women, and other nondominant family structures are considered out of the norm.⁷⁶

The Edinburgh criteria,⁷⁷ used in examining ideal OTC candidates, also suggest that social norms regarding age and infertility are at play here. By framing the “ideal” candidate in terms of age, the criteria implement yet another barrier for women to overcome in receiving infertility treatment. On the one hand, it is undeniable that there is a medical “tipping point” in women’s fertility after age thirty-five,⁷⁸ when egg quality and quantity decrease more noticeably.⁷⁹ On the other hand, it is entirely possible for women to get pregnant after age thirty-five.⁸⁰ There is a debate about using thirty-five as a “cutoff” age for fertility, as a Society for Assisted Reproductive Technology (SART) study showed that ART success rates greatly decrease beyond age forty.⁸¹

Even outside of the fertility context, there is the argument that older women might not have the energy and patience to raise children as they

⁷⁶ See Gillian R. Chadwick, *Legitimizing the Transnational Family*, 42 HARV. J.L. & GENDER 257, 270–71 (2019) (noting that biological supremacy views parenthood through biological status rather than social status); see also *What Motherhood Is Like When You’re the “Other” Mother*, KIT: LIFE (May 4, 2018), <https://thekit.ca/life/motherhood-when-youre-the-other-mother> (“But socially and culturally, motherhood, as a concept and an (admittedly fraught) identity, is overwhelmingly bound up in the act of gestation, rooted in a kind of biological supremacy.”).

⁷⁷ Although there is no state or federal guidance for the OTC procedure, the medical industry has emerged with guidelines for selecting patients, known as the Edinburgh criteria, to serve as a reference standard for physicians. Charlotte Bath, *Comparing Options for Ovarian Tissue Cryopreservation to Preserve Fertility in Pediatric Patients with Cancer*, ASCO POST (Jan. 25, 2020), <https://ascopost.com/issues/january-25-2020/ovarian-tissue-cryopreservation-to-preserve-fertility-in-pediatric-patients-with-cancer>; see W. Hamish B. Wallace, Alice Grove Smith & Richard A. Anderson, *Fertility Preservation for Girls and Young Women with Cancer: Population-Based Validation of Criteria for Ovarian Tissue Cryopreservation*, 15 LANCET ONCOLOGY 1129, 1130 at panel 1 (2014) (noting that the first Edinburgh criterion is “[a]ge younger than 35 years”).

⁷⁸ A woman’s fertility starts to decline at age thirty-two and increasingly declines by age thirty-seven. Bonnie Rochman, *Don’t Count on Having Kids if You Freeze Your Eggs*, MIT TECH. REV. (Aug. 14, 2019), <https://www.technologyreview.com/2019/08/14/133377/mothers-journey-egg-freezing-parenthood> (citing AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS COMM. ON GYNECOLOGIC PRAC. & THE PRAC. COMM. OF THE AM. SOC’Y FOR REPROD. MED., COMMITTEE OPINION NO. 589: FEMALE AGE-RELATED FERTILITY DECLINE 1 (2014)).

⁷⁹ Natasha Lavender, *So, Let’s Talk About That Whole Fertility and Age 35 Thing*, SELF (Aug. 22, 2019), <https://www.self.com/story/fertility-age-35>.

⁸⁰ *4 Myths About Getting Pregnant After 35—Debunked*, STORMONT VAIL HEALTH: BLOG, SIMPLIFYING HEALTH CARE, <https://www.stormontvail.org/2019/10/15/pregnant-after-35/> (last visited Nov. 30, 2021).

⁸¹ Rachel Gurevich, *5 Things You Need to Know About Getting Pregnant After 35*, VERYWELL FAM., <https://www.verywellfamily.com/getting-pregnant-after-35-heres-what-you-need-to-know-1959920> (Oct. 1, 2020) (citing SOC’Y FOR ASSISTED REPROD. TECH., FINAL NATIONAL SUMMARY REPORT FOR 2018, https://www.sartcorsonline.com/rptCSR_PublicMultYear.aspx).

continue to age.⁸² The mandate of motherhood theory traditionally requires that a woman can only become educated, work, and have a public life as long as she first has children and raises them “well.”⁸³ But this is in sharp contrast to the view that older women make better mothers, as they tend to have more stable relationships, higher levels of education, and financial stability.⁸⁴ In each contrasting position, however, the common ideology lies in the fact that a woman’s social value is closely tied to her reproductive capabilities and her fated motherhood. In addition to social perceptions of age and motherhood, issues surrounding access to reproductive care, corporate culture, lack of paid paternal leave for new parents, perceptions of motherhood for racial minority women, and lack of affordable childcare underlie each of these arguments.

CONCLUSION

The combination of the high treatment costs, lack of widespread insurance coverage for ARTs, and social norms make it almost impossible for women with a lower socioeconomic status or those who come from traditionally marginalized groups to collectively overcome existing barriers of access to fertility treatments.⁸⁵ The social forces illustrated in this context, such as reproductive justice and socioeconomic status, are not unique to OTC. The same dichotomy between increasing availability and increasing access generally exists in reproductive regulation and ARTs.

More regulatory framework is needed for reproductive technologies. Due to the strong link between social identity and reproduction, regulation of OTC will have real-world consequences. Although the advancement of OTC should be celebrated for its ability to provide women a way to preserve their fertility on short notice, there are concerns similar to those in the context of egg freezing when looking at this procedure for elective use. These concerns illuminate the ways in which current insurance and regulatory schemes fall flat in providing meaningful coverage to those who need it most and illustrate how reproductive justice and cultural norms impact ART advancements.

⁸² M.M. Peterson, *Assisted Reproductive Technologies and Equity of Access Issues*, 31 J. MED. ETHICS 280, 283 (2004).

⁸³ Nancy Felipe Russo, *Overview: Sex Role, Fertility and the Motherhood Mandate*, 4 PSYCH. WOMEN Q. 7, 7–8 (1979).

⁸⁴ Alexa Erickson, *Ditch Your Biological Clock—Science Says Older Moms Are Better Parents*, HEALTHY, <https://www.thehealthy.com/pregnancy/being-an-older-mom> (last visited Dec. 1, 2020) (citing Tea Trillingsgaard & Dion Sommer, *Associations Between Older Maternal Age, Use of Sanctions, and Children’s Socio-Emotional Development Through 7, 11, and 15 Years*, 15 EUR. J. DEV. PSYCH. 141, 142 (2018)).

⁸⁵ The term “traditionally marginalized” should be broadly interpreted to include racial, ethnic, and religious minorities, LGBTQ+ and other hetero-nonconforming communities, individuals with mental or physical disabilities, migrants, indigenous communities, and other marginalized groups not explicitly mentioned in this Comment.