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SOCIAL INCLUSION

Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms

Edited by Anne-Kristin Kuhnt, Jörg Rössel, and Heike Trappe

Volume 13

2025

Open Access Journal

ISSN: 2183-2803

Social Inclusion, 2025, Volume 13
Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms

Published by Cogitatio Press
Rua Fialho de Almeida 14, 2° Esq.,
1070–129 Lisbon
Portugal

Design by Typografia®
http://www.typografia.pt/en/

Cover image: © Peach_iStock from iStock

Available online at: www.cogitatiopress.com/socialinclusion

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2025 • Volume 13 • Article 11540
https://doi.org/10.17645/si.11540

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EDITORIAL

Open Access Journal

Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms

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Submitted: 15 October 2025 **Published:** 4 November 2025

Issue: This editorial is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

This editorial introduces the thematic issue on current developments in medically assisted reproduction (MAR), focusing on how social inequality and social norms influence access, attitudes, and experiences. The contributions in this issue examine the social stratification of reproductive opportunities across different groups and countries, explore the normative and legal frameworks that govern MAR, and consider how evolving family structures challenge existing reproductive policies. The issue also highlights significant data limitations in current research—especially the absence of key variables, such as income or migration status, and internationally comparable data—which hinder efforts to achieve more equitable access to reproductive healthcare. Overall, the contributions advocate for interdisciplinary approaches and better data systems to deepen our understanding of these issues and address reproductive exclusion in modern societies.

Keywords

assisted reproductive technologies (ART); data gaps; family diversity; in vitro fertilization (IVF); medically assisted reproduction (MAR); social inequality; social norms; stratified reproduction

1. Introduction: The Rise of Medically Assisted Reproduction

Since the birth of the first child conceived through in vitro fertilization (IVF) in 1978, technological advances supporting human reproduction have progressed rapidly. These innovations have established the foundation for a wider set of practices known as medically assisted reproduction (MAR), which includes various clinical and laboratory procedures used to treat infertility and assist individuals in conceiving. These procedures now

extend well beyond conventional IVF to include a diverse range of reproductive options, such as intracytoplasmic sperm injection (ICSI), which is now preferred over IVF in many cases; donation of gametes (sperm cells and eggs); egg freezing to prolong the fertile phase (social freezing); hormone therapies; and gestational surrogacy, in which a fetus is carried by a third person (Inhorn, 2017; Trappe, 2016; Ullrich, 2016; Zegers-Hochschild et al., 2017). Alongside advancements in the technological capabilities of MAR, research is increasingly focusing on the global issue of widespread infertility among couples. It is estimated that around 10% of all couples suffer from infertility for various reasons and might, therefore, benefit from the use of reproductive medical procedures (Inhorn & Patrizio, 2015).

In contrast to a purely medical perspective on infertility and reproductive medical procedures, attitudes about and the willingness to address these issues are embedded in a rapidly changing social context, which must be placed at the center of a broader social science perspective. Almeling (2015) therefore describes reproduction as a "multilayered biological and social process," in which reproductive decisions are dependent on physical processes, individual experiences, social norms, social network influences, social structures, values, and institutions.

If we take a closer look at the social framework conditions of reproduction and reproductive decisions, we can clearly see dramatic changes in partnership and family constellations, including increased employment among women, a declining propensity to marry, higher proportions of children born out of wedlock, increased divorce rates, ever higher ages at first birth, higher rates of childlessness, and increased rates of single parenthood (Balbo et al., 2013; Goldscheider et al., 2015; Miettinen et al., 2015; Sobotka, 2011). This means that the social contexts of fertility and family formation have undergone significant changes in recent decades. The increasing acceptance of same-sex living arrangements, in which the use of reproductive medicine is often the only way to start a family other than through social parenthood, has also led to new questions in the field of reproduction and fertility (Beham-Rabanser et al., 2024; Inhorn & Birenbaum-Carmeli, 2008), which previously focused primarily on married heterosexual couples. Thus, the desire of single women or same-sex couples to have children has now moved to the center of the discussion (Bos et al., 2003; Fedewa et al., 2015; Van Gasse & Mortelmans, 2020). This thematic issue explores processes of social change as the context of reproductive decisions. The contributions mainly focus on the role of social inequality and social norms in explaining individual and collective attitudes toward MAR, its use, and the associated experiences of people in contemporary Western societies. The selection of studies from different countries enables a comparative perspective in the analysis of the influence of social inequality and social norms on attitudes toward and the use of MAR.

2. The Role of Sociology: Addressing Social Inequality

One of the most important aspects of sociology to consider when examining people's attitudes and actions is how they are shaped by structures of social inequality (Rössel, 2024). Social inequality refers to the distribution of resources and opportunities within a population, which is generated by social processes and is associated with social positions and categories, such as professions, social classes, genders, ethnic affiliations, or age groups. These inequalities shape people's opportunities to act and their attitudes. Thus, attitudes toward MAR and its use also reveal characteristic influences of social inequality structures, which can differ depending on the MAR process under consideration. It should be emphasized that in many countries, MAR is only partially paid for by public health insurance, which means that its use is associated

with considerable costs (Passet-Wittig & Bujard, 2021; Pennings et al., 2016; Präg & Mills, 2017b). For example, a German study (Köppen et al., 2021) shows that the use of IVF and ICSI is higher among higher-income and married heterosexual couples than among other groups. In addition, Schmid et al. (2025) find that social freezing is particularly popular among well-educated, career-oriented women without a partner. These exemplary results make it clear that research should pay particular attention to the different effects of social inequality on the various MAR procedures under consideration. Social structures also shape attitudes toward MAR. Generally, younger, non-religious, educated, and same-sex-oriented people are more likely to accept or support the use of MAR, although clear differences exist depending on the procedure (Fauser et al., 2019; Inhorn & Birenbaum-Carmeli, 2008; Mertens, 2025).

In their article, Mertens et al. (2025) examine the role of socio-demographic variables, general background attitudes, and specific benefits and constraints in the decision of young women in Switzerland to consider social freezing as a possible option for the future. In their relatively homogeneous sample of students, the role of socio-demographic factors proves to be negligible, but the expected costs are a strong reason not to use social freezing. On the other hand, the expansion of reproductive autonomy, the possibility of a more unencumbered choice of partner, and the greater ability to pursue career opportunities clearly emerge as driving forces. The study highlights that background factors such as socio-demographic variables and more general attitudes are mediated by more specific costs and benefits in the actual consideration of using social freezing.

Passet-Wittig et al. (2025) provide nuanced insights into the various stages of reproductive medical assistance, asking whether and how social disparities affect this process. They distinguish between the following consecutive stages of assisted reproduction: none, doctor's visit, medication, and advanced methods such as IVF. Their data analyses are based on the first wave of the Family Demographic Panel (FReDA) in Germany. Women up to age 50 have a slightly higher rate of use of reproductive medicine than men. They show that at all stages, it is mainly married women and men with a higher household income who use reproductive medical assistance, while education and migration background are not decisive factors. The authors conclude that, in addition to financial barriers, cultural and knowledge-based factors are also relevant in determining whether people seek help.

Even as Western societies grow more secular, religion still plays a significant role in shaping public opinions on family and reproductive topics. The research by Schroedter (2025) investigates how different aspects of religiosity—such as religious affiliation, socialization, self-rated religiosity, and practices—affect moral acceptance of MAR within the Swiss population. Using data from the representative CHARLS 2023 survey, the study provides a detailed overview of nine MAR procedures. Results indicate that higher levels of religiosity are strongly linked to lower acceptance of MAR, with personal religiosity and prayer frequency being the most influential factors. While religious affiliation affects attitudes, particularly among Muslims and Evangelicals, its impact decreases once individual religiosity is considered. The findings highlight the lasting influence of religion on attitudes toward reproductive technologies, despite the increasing secularization of society.

However, it is not only the traditional social-structural positions and resources that play a role in the use of MAR. The changes in family structure described in the introduction also create new inequalities, which are primarily based on institutional rules governing access to MAR. In some countries, such as in Switzerland, access to MAR is limited to married individuals. Moreover, in many countries, same-sex couples do not have

easy access to MAR and single women are not allowed to use sperm donation to have a child. These legal regulations, in combination with changes in family structures, create new forms of inequality, which are also addressed in this thematic issue.

In their article, Chautems et al. (2025) focus primarily on the specific inequalities that lesbian couples experience in their attempts to fulfill their desire to have children in Switzerland. Like single women and other non-normative family constellations, they are affected by certain legal restrictions on the use of MAR. In addition, numerous actors in the healthcare system are not familiar with the new family constellations. For these reasons, many lesbian couples go abroad to fulfill their desire to have children, including to make use of egg donation, which is prohibited in Switzerland.

3. The Role of Sociology: Addressing Social Norms

Social norms are statements that contain guidelines for our actions (Bicchieri, 2016; Horne & Mollborn, 2020); they can prohibit certain behaviors (Thou shalt not commit adultery!) or command certain behaviors (Thou shalt start a family!). Social norms can be formulated in various ways, ranging from concrete instructions for action to general ideas about how we should organize specific areas of our lives (e.g., gender relations). In addition, social norms can be institutionalized to varying degrees, from relatively informal expectations of friends and family to legally binding rules of conduct (Präg & Mills, 2017b; Trappe, 2016; Ullrich, 2016). Some of these regulations have already been discussed in the previous section, as they create new inequalities in connection with structural changes in the family.

Legal frameworks are examples of highly institutionalized social norms. Tamakoshi and Zagel's (2025) article presents a novel framework for evaluating how government policies affect reproductive equity, offering fresh perspectives on the links between welfare systems, legal availability, and financial assistance in MAR and abortion. They differentiate between policy permissiveness and generosity to show how countries either support or limit reproductive autonomy, often in response to social and economic inequalities. Using comparative data and case studies from Austria, Germany, and Switzerland, the research highlights ongoing disparities in access despite overall movements toward equity. This study significantly advances our understanding of how state institutions and societal norms shape who is granted or denied reproductive freedom.

Von Scheliha (2025) focuses on the legal regulation of egg donation in Germany and its impact on women's reproductive autonomy. Unlike sperm donation, egg donation is prohibited and punishable by law. This indicates that female reproduction is more heavily regulated and controlled than male reproduction, primarily due to internalized social norms. The long-standing, contentious debate goes beyond the legal framework and touches on many ethical aspects. The author engages in a feminist and intersectional discussion that focuses on reproductive self-determination. She concludes that regulations outside of criminal law are sufficient to protect the rights of the egg donor, the egg recipient, and the child, and that there is no reason to deprive women of the ability to make autonomous decisions about their bodies.

Beyond the legal framework, normative ideas about gender relations, reproductive rights, health, and illness in social discourses and in individual attitudes shape human decisions in the areas of family and fertility (Balbo et al., 2013; Goldscheider et al., 2015; Lappegard et al., 2022).

Kristensen and Lie (2025) examine the normative embedding of the legalization of egg donation in the general female population in Norway. The central values of Norwegian society are clearly expressed in these attitudes. On the one hand, the legalization of egg donation is seen as a step toward more fairness and equality, enabling couples to realize their unfulfilled desire to have children. On the other hand, the willingness of the women interviewed to donate their own eggs is firmly embedded in normative references to family, children, and privacy. Many women are hesitant when it comes to donating an egg themselves, because in this case, they would have no contact with their child (i.e., the child created by their egg cell), and they would not be able to assume maternal care and responsibility as normatively expected.

The study by Szalma and Pélyi (2025) shows very clearly that support for MAR in Hungary, especially for lesbian couples, is strongly influenced by normative ideas. People who have more conservative values, reject migration, and lament Hungary's declining population strongly support MAR, but not for lesbian couples. The desire for reproduction among lesbian couples is more strongly supported by people who have less conservative normative ideas. This article also shows a strong coherence of attitudes across different issues like migration, MAR, and family models.

Kiščenko (2025) examines in her contribution how access to state-funded infertility treatment in Latvia is regulated and morally framed. State funding applies to clinically diagnosed infertility in women or their partners, provided that the women are younger than age 41 and have not already received state support for two treatment cycles without a clinically confirmed pregnancy. The author draws on an analysis of official documents related to sexual and reproductive health, as well as on several semi-structured interviews with Latvian politicians and reproductive medicine specialists. It becomes clear that reproduction is perceived exclusively in heteronormative and female-centered terms. Furthermore, medical treatment for infertility is described as an economic investment on the part of the state, for which a demographic return is expected.

The study by Michaud and Oakley (2025) examines the discourse on social freezing in Canadian medical journals. Here, it becomes clear that the normative boundary between health and illness is being increasingly shifted in the discourse on egg freezing. While social egg freezing was previously strongly framed as a form of MAR use chosen for personal reasons, the medical discourse shows an increasing tendency to pathologize declining fertility with age in women as a health problem to be treated. In general, this discourse uses the role of the active individual who rationally shapes his or her life as a background framework.

Griessler's (2025) article provides a timely look at how social norms shape the conversation about social egg freezing in Austria. Going beyond individual reproductive choices, the study shows how people's opinions on social egg freezing are influenced by wider societal expectations about gender roles, work-life balance, and the best timing for becoming parents. Through interviews with key stakeholders, the article reveals a divided debate marked by mixed feelings, skepticism, and calls for a more informed and detailed public discussion. Importantly, the findings emphasize that social egg freezing is often seen not as a solution, but rather as a sign of deeper structural and normative issues, highlighting the importance of critically examining how reproductive technologies connect with cultural and political frameworks.

4. Bridging Sociology and Other Disciplines

As has already become clear, MAR as a multilayered process (Almeling, 2015) can and should serve as a lens through which different disciplinary perspectives can be fruitfully combined. In addition to medicine, law, and ethics, these fields also encompass various social sciences, including sociology, demography, and social psychology (Beier et al., 2020; Joffe & Reich, 2025). To better understand the experiences people have during treatment, this thematic issue highlights the link between MAR and social psychology in particular. As Passet-Wittig and Bujard (2021, p. 427) write, "MAR provides hope to people whose chances of natural conception are low or non-existent. Thus, it is important to investigate what makes fertility treatment so burdensome."

Based on collaboration between social scientists and reproductive medicine specialists, Kuhnt et al. (2025) have conducted a pilot study in two clinics in northern Germany and found that women tend to experience high levels of psychological distress at the beginning of their IVF treatment process. This is particularly true for those who report trying to conceive for an extended period of time. Furthermore, women are more likely to cite stress as the primary reason for not becoming pregnant if their partner already has a biological child. These findings can be explained using social psychological theories of attribution and identity.

Böcker and Jakoby (2025) examine the emotional journey of women undergoing reproductive medical treatment in Switzerland through a sociological lens focused on emotions. They combine the results of a qualitative interview study with those of a social science survey. The authors reveal the extent to which typical experiences and processes, particularly those related to pregnancy loss, are influenced by social norms and cultural values. Their findings illustrate a broader perspective on loss in the context of reproductive medicine treatments. Even women whose treatment ultimately results in a healthy child have to deal with prolonged experiences of grief and loss. Thus, both articles underscore the importance of providing women with differentiated psychosocial counseling throughout the entire course of assisted reproduction and realistic information about their chances of success.

5. Conclusion and Future Perspectives

This special collection brings together diverse perspectives on the evolving landscape of MAR, with a focus on the roles of social inequality and social norms. The contributions explore a wide range of MAR practices, highlight mechanisms of inclusion and exclusion, and provide comparative insights across countries. They show how legal frameworks often reflect deeper cultural values and moral assumptions, and how access to MAR is shaped by both structural inequalities and shifting family constellations. The articles in this special collection also draw attention to the fragmentation of MAR forms, which are differently shaped by social inequality and social norms.

At the same time, the contributions also make visible a persistent gap in the field: the lack of comprehensive, comparative, and socially differentiated data on MAR access, use, and outcomes. Existing datasets often omit key variables such as income, sexual orientation, or migration background, and rarely reflect the full diversity of family structures or reproductive trajectories (Kuhnt & Passet-Wittig, 2022). In addition, there is a lack of comparable data across countries in Europe or beyond. These gaps in data limit our understanding of reproductive inequalities and hinder the development of inclusive policies and support systems.

Taken together, the contributions in this special collection underscore the need for interdisciplinary, norm-sensitive, and equity-focused research that continues to examine how reproduction is governed, experienced, and challenged in contemporary societies. Future research should continue to examine how policy, culture, and personal agency intersect—particularly for underrepresented groups—to promote more inclusive and equitable reproductive futures.

Acknowledgments

We appreciate the anonymous reviewers for their meticulous reading and insightful feedback on this collection. Additionally, we thank the editors and administrative staff of *Social Inclusion* for their continued support and patience.

Conflict of Interests

The authors declare no conflict of interests.

LLMs Disclosure

In preparing this editorial, large language models (Grammarly, DeepL, and ChatGPT) were used for language and style editing to improve clarity and coherence.

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Social Inclusion
2025 • Volume 13 • Article 10432
https://doi.org/10.17645/si.10432

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Between Ambition and Uncertainty: What Drives Young Women to Consider Social Freezing?

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Submitted: 29 March 2025 **Accepted:** 27 June 2025 **Published:** 7 August 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms," edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Social egg freezing has increasingly become a topic of public discussion in recent years. It means the cryopreservation (freezing) of human unfertilized egg cells, which enables women to postpone pregnancy to a later age. The discussion has often focused on the normative implications of this technological innovation in reproductive medicine and on the reasons that motivate women to use it. Our study analyzes the covariates of the desire to use social freezing. We model this desire based on a broad rational choice model of decision making. In this theoretical framework, we consider the specific constraints and costs that determine this consideration, but also the benefits that drive the desire to use social freezing in the future. We particularly focus on career ambitions, gender roles, specific benefits and constraints, as well as social norms concerning social freezing. We test this broad rational choice model based on a survey among university students (N = 805) at the University of Zurich conducted in 2023, focusing on a population segment that is especially inclined to consider the utilization of social freezing. Our empirical results show that the desire to use social freezing is driven by both tangible benefits, such as enhanced career prospects and more time to find a suitable partner, and normative benefits, like increased reproductive autonomy. However, the high financial costs of the procedure significantly inhibit potential uptake. Broader attitudes toward gender roles and career orientation also influence these desires, though more immediate cost–benefit considerations largely mediate their effects.

Keywords

assisted reproductive technologies; cryopreservation; fertility; rational choice; social freezing; social norms

1. Introduction

Human fertility and family formation are drastically changing in Western societies: Family planning is affected by increasing uncertainties about how to combine work and family, changing gender norms, and partnership instability (Cooper et al., 2011; Gregory et al., 2013; Sherman, 2009). In many high-income countries, including Switzerland, the age at first childbirth has steadily risen (Bundesamt für Statistik, 2023; Sobotka, 2011) as higher education, career progression, and longer life expectancy have shifted major life events to later stages, yet the biological constraints of fertility remain unchanged (European Society of Human Reproduction and Embryology Capri Workshop Group, 2005). At the same time, the opportunities for postponing parenthood are improving as an increasing number of individuals turn to the cryopreservation of unfertilized egg cells (known as "egg freezing" or "oocyte freezing") as a means of fertility preservation (Human Fertilisation and Embryology Authority, 2024). While the freezing of unfertilized egg or sperm cells was initially developed as a medical intervention for patients undergoing chemotherapy, it is increasingly being used for non-medical reasons, allowing women to postpone motherhood despite the natural decline in fertility with age. This development led to the term "social (egg) freezing" (SEF).

The debate on SEF is intertwined with feminist and ethical considerations. De Proost and Coene (2019) argue that SEF reinforces neoliberal gender norms, portraying fertility as an individual responsibility and self-optimization rather than addressing broader structural inequalities (see also Bozzaro, 2018; Myers & Martin, 2021; Wunder, 2013), which make balancing career and family challenging. Mertes and Pennings (2011) adopt a more balanced stance, acknowledging that while SEF offers reproductive autonomy, clinics should be cautious about marketing the procedure as a guaranteed solution. Van de Wiel (2020) similarly critiques the increasing commodification of fertility, arguing that SEF perpetuates gendered reproductive norms and reinforces inequalities in reproductive access.

The increase in usage, improving success rates, and political changes in access to medically assisted reproduction in general raise several sociological questions. Our study aims to shed light on the specific motivations and benefits, social norms, and constraints shaping the desire to use SEF among young women. Previous empirical research on the motivations to use SEF is mainly qualitative. While highlighting the diverse motives of young women considering SEF, it leaves open the question of generalizability. Furthermore, most quantitative empirical research has focused on women who have already used SEF (Jones et al., 2019; but see also Schmid et al., 2025). Therefore, our study is one of the first to examine the determinants of considering SEF using a quantitative methodology and a prospective design, focusing on young women primarily before their family-formation phase. Our approach is based on a broad rational choice model of decision making to consider both motivations and benefits, social norms, and specific constraints that could influence the decision to consider SEF in the future. By using a comprehensive survey conducted among students, specifically female and non-binary students at a BA, MA, and PhD level (N = 805) at the University of Zurich (UZH) in 2023, we investigate how these specific determinants are interwoven with broader background attitudes regarding career and gender roles, prevailing social norms, and patterns of social stratification. This approach ultimately aims at answering the research question (RQ): Considering particular benefits, specific constraints, social norms, and background attitudes, which are the most important motivations and constraints relating to the desire to use SEF in the future among young and educated women? This broad perspective enables us to disentangle the direct and indirect impact of more specific benefits, general attitudes, and socio-demographic variables capturing structures of social inequality.

The present study must be contextualized by taking the rather restrictive legal situation for reproductive medicine in Switzerland into account. Focusing on the most important technologies, in-vitro fertilization, insemination, sperm donation, and SEF are allowed in Switzerland, whereas egg cell donation and surrogacy are illegal. Only married couples are permitted to use these legal technologies. Since 2022, this has also been true for same-sex female couples. However, health insurance covers only the use of insemination for couples diagnosed with infertility. Concerning SEF, eggs can only be stored for five years, which is extendable to ten years. To use the frozen eggs, in-vitro fertilization is necessary, but single parenthood is not possible. In addition, in-vitro fertilization is only lawful in the case of infertility, meaning that the frozen eggs will only be relevant if, by the time of use, the mother (or father) is diagnosed with infertility, and the couple is married (The Federal Assembly of the Swiss Confederation, 1998).

Before we introduce our data and statistical methods of analysis in Section 3, we explain the state of research on the use of SEF and our theoretical approach in Section 2. The empirical results are presented in Section 4. We discuss the conclusions from our research and its limitations in Section 5. Overall, our empirical results show that the desire to use SEF is driven by both tangible benefits and constraints, as well as normative attitudes and benefits.

2. State of Research

The process of egg freezing involves stimulating the ovaries with hormones to produce multiple eggs, retrieving these eggs from the ovaries, and then freezing them using a technique called vitrification, which prevents ice crystal formation and thus preserves egg quality (Nawroth, 2015). Over the past decade, advances in vitrification have significantly improved the success rates of egg freezing, which, however, vary considerably depending on the cited source. For younger women under the age of 38, the American Society for Reproductive Medicine (2023) estimates that the chance of a baby being born from a frozen egg is between 2 and 12%. In contrast, Lockwood (2011) quotes a success rate of up to 50%—a figure that depends heavily on the age at which the eggs are retrieved. Mertes and Pennings (2011) argue that the lower success rates are largely due to many women undergoing treatment in their late 30s when their eggs are already considered "suboptimal." They argue that SEF should ideally be offered to women in their mid to late 20s. It should also be noted that the use of frozen eggs requires in vitro procedures, which themselves have relatively low success rates (Milman et al., 2017). Since Apple and Facebook announced in 2014 that they would cover the cost of SEF for their employees, the technology has attracted increasing media attention (Mertes, 2015). With this, the number of egg freezing cycles performed has increased by around 25–30% annually (Baldwin et al., 2019).

With the growing societal interest in the use of SEF, scientific interest in the topic has also increased. Publications from various specialist areas shed light on the procedure from social, ethical, legal, and medical perspectives. Social scientific literature has mainly focused on the socio-demographic composition of (potential) users, their motivations, and opportunities to use SEF. Regarding socio-demographic variables, women who opt into SEF tend to be single, highly educated, and actively engaged in the workforce, with a strong emphasis on genetic motherhood (Inhorn et al., 2018; Osaah et al., 2024; Schmid et al., 2025). Moreover, research shows that both age and identifying as a sexual minority are significantly correlated with the intended use of SEF. According to a study by Lewis et al. (2016), younger age, being single, and being bi- or homosexual (as compared to heterosexual) are all associated with personally considering SEF. A recent

study by Chehimi et al. (2025) also confirms that in France, where SEF is fully covered by public health insurance, the women who make use of SEF are single, childless, have a high educational level, and a high socioprofessional status.

Notably, a study in the UK found that participants undergoing oocyte cryopreservation were, on average, 36.7 years old (Baldwin et al., 2015). From a medical point of view, this is rather old as the age-related decline in ovarian reserve has started by this point. Knowing that women tend to freeze their eggs this late makes interviewing young women who are in their prime reproductive years especially important (see Osaah et al., 2024; Tozzo et al., 2019, for examples from Ghana and Italy).

2.1. Benefits and Constraints of Social Egg Freezing

One of the most widely discussed drivers of SEF is the fear of age-related fertility decline. Research consistently shows that women freeze their eggs due to concerns about diminishing ovarian reserve and the biological limitations of fertility. A qualitative study of 31 participants in the UK by Baldwin et al. (2019) found that women primarily opt for SEF because they feel that they are running out of time to start a "conventional" family. The desire not to regret it later and not to be ashamed of not having done SEF played a central role here, but also the desire to take the pressure off new partnerships was cited as a motivation. In addition, difficulties in finding a suitable partner and concerns about "panic partnering" were named as key motivations. Similarly, Kanters et al. (2022) found that Dutch women who engaged in SEF were primarily motivated by the fear of not finding a suitable partner and concerns about reproductive timing. This aligns with findings from Inhorn (2023), who explores how SEF is driven by the "mating gap," where women are unable to find suitable partners during their peak reproductive years. Inhorn (2023) emphasizes how SEF provides emotional and social reassurance but also highlights systemic gender and relationship dynamics. Beyond biological concerns, career considerations also play a significant role in SEF decision-making. While some scholars question whether career aspirations are a primary driver of SEF (Inhorn, 2023), others find that women who pursue SEF are often highly educated and career-oriented, highlighting the role of professional ambitions in shaping reproductive planning (Baldwin et al., 2015; Schmid et al., 2025). Studies that primarily address ethical aspects of the procedure highlight how SEF is often framed as a tool for career planning, allowing women to prioritize education and professional aspirations before transitioning into motherhood (De Proost & Coene, 2019; Rottenberg, 2017).

Concerning limitations in the use of SEF, the most prominent aspects are the costs, uncertainty of success, and potential medical side effects. Platts et al. (2021) conducted a systematic review on women's attitudes towards SEF and found that financial constraints were a significant deterrent, even for women who expressed interest in the procedure. This was confirmed in a study of female students at a private university in Ghana, where interest in SEF was notable but the costs were a clear barrier (Osaah et al., 2024). SEF is often prohibitively expensive and rarely covered by insurance, making it accessible primarily to wealthier individuals (Baldwin, 2018; van de Wiel, 2020). Moreover, as Mertes and Pennings (2011) point out, the chances of achieving a live birth from frozen eggs remain uncertain and depend heavily on the woman's age at freezing. According to qualitative interviews with women who had decided on SEF, this uncertainty of success changed significantly with a transition in the freezing method—from the traditional slow freeze method to the more promising vitrification—yet the uncertainty remains relevant in their decision (Baldwin, 2019). The potential medical downsides (and especially their relevance to women considering SEF) have so

far received comparatively little attention in academic discourse. The procedure involves hormonal stimulation, egg retrieval under sedation, and potential side effects such as ovarian hyperstimulation syndrome, infection, and emotional distress (Baldwin, 2019; Nawroth, 2015). Mertes and Pennings (2011) caution that SEF is often promoted without sufficient awareness of its medical risks, particularly when performed at later reproductive ages when success rates decline. Similarly, De Proost and Coene (2019) criticize the discourse for the fact that the medical risks and burden are sometimes downplayed in favor of an emphasis on autonomy. Baldwin (2019) found in her interviews with SEF users that the physical side effects came as quite a shock to many, yet in retrospect, they were seen as a "short-term sacrifice in the pursuit of a longer-term goal" (p. 101).

While these previous studies offer intriguing insights into women's motivations to freeze their eggs, our study addresses some shortcomings that they face. First of all, most interview studies that focused on motivations and constraints only interviewed women who had already used SEF (e.g., Baldwin et al., 2019; Inhorn, 2023). While approaching women who have already used SEF is straightforward when analyzing motivations, it overlooks the opinions and reasoning of women who would not use it or have not put any thought into it. In addition, asking for motivations and constraints after use is also methodologically susceptible to forms of post-hoc justification (see Winchester & Green, 2019). Therefore, our study covers young women mainly before they have started the phase of family formation. Further, many studies on SEF are qualitative and focus on two major issues in the decision to choose SEF: Compatibility of work and family, and the availability of suitable partners for family formation. Our study aims at a quantitative assessment of the main determinants of the willingness to use SEF among young women at the university, which also means they can be assumed to have certain career aspirations. We see a strength in our sample because previous research has shown that especially women with tertiary education remain childless (Lockwood, 2011; Sobotka, 2011). This is especially true for Switzerland, where the wish to have children does not diverge strongly between women with different levels of education. However, the realized number of children is comparatively low for women with tertiary education in Switzerland (Beaujouan & Berghammer, 2019). Reconciling employment and family is rather difficult since parental leave regulations are comparatively restrictive and daycare is rather expensive in Switzerland (Bundesamt für Statistik, 2021). The question of fertility preservation is therefore most relevant to highly educated women in this country. Because of the rather young age of university students, we decided not to focus on the topic of age-related fertility decline.

2.2. Rational Choice Model of Decision Making

To model the interplay of motivations for SEF and its constraints, we turn to a broad version of rational choice theory (RCT), a frequently used explanatory perspective in the social sciences. However, it has received little attention in the explanation of reproductive decision-making. To our knowledge, only one other study has used this approach to SEF so far. Kılıç and Göçmen (2018) analyzed women's motivations to freeze their eggs using an RCT perspective in semi-structured interviews with 21 women in Turkey who were either in the process of SEF or had used it in the previous year. They found that women "engage in rational calculations to find a solution to their reproductive concerns" and that they "turn to their own belief systems when dealing with future uncertainty; and they negotiate social norms…while trying to conform to traditional reproductive roles" (p. 19).

RCT is based on three main assumptions concerning preferences, constraints, and outcomes like decisions, intentions, or desires (Becker, 1976; Coleman, 1990; Opp, 1999; Schenk et al., 2018):

1. Preferences and goals: Individuals are motivated by well-ordered, consistent preferences for certain outcomes. In other words, behavior and other outcomes are driven by specific goals, and people can rank different alternatives, like benefits or costs, according to these goals.
2. Constraints: Individuals face various constraints—whether opportunities or restrictions—that affect their ability to realize these goals. These constraints shape the set of available alternatives and influence the costs and benefits associated with each choice.
3. Decision rule: Given their preferences and the constraints they face, individuals choose between alternatives by applying a decision rule. Most rational choice models assume that people select the action, attitude, or intention that best satisfies their goals (maximization of utility) by weighing all available costs and benefits.

RCT has been used to explain different types of outcome variables, like decisions, behaviors, intentions, desires, or attitudes (Becker, 1976; Coleman, 1990; Opp, 1999; Schenk et al., 2018). Our dependent variable focuses on the question of whether young women would consider the use of SEF in the future. Based on the widely used traits-desires-intentions-behaviors framework to explain fertility by Miller (1994), this represents a desire and not an intention, since it represents feelings towards a possible goal, not a specific plan to put this goal into action. Miller (1994, p. 228) assumes that desires are mainly shaped by factors internal to the individual, like motivations, attitudes, and beliefs. Beliefs usually focus on external conditions like satisfaction with work, career opportunities, or the chance to find a suitable partner.

Therefore, based on this model, the impact of particular motivations and benefits can only be determined if constraints are empirically taken into account. What specific benefits and constraints have to be considered to explain the desire to use SEF? To develop an explanatory model including a broader set of constraints and motives, we systematize motivations and constraints previously discussed in the literature on SEF and related research on fertility and family decisions.

Concerning preferences and goals, as shown above in the literature review on the main motivations for SEF, the main goals and benefits which are mentioned in research are related to the fear of running out of time (Baldwin et al., 2019): This is, on the one hand, the goal of developing a career before starting a family, and, on the other hand, the search for a suitable partner to raise a family with (Inhorn, 2023; Kanters et al., 2022). Therefore, we will focus on the relative importance of these two motivations in our analysis. In addition, we will also include the increase in autonomy as an additional benefit, which is often mentioned as a liberating moment in the literature on SEF (Bernstein & Wiesemann, 2014; Dondorp & De Wert, 2009; Mertes & Pennings, 2011).

In regard to constraints, a decision for SEF is not made in a vacuum; women must weigh the potential benefits of preserving fertility and their motivations to use SEF against the financial and medical constraints inherent to the procedure (Platts et al., 2021). Furthermore, SEF is not covered by medical insurance and is comparatively expensive in Switzerland, which makes the financial burdens especially salient. As described in the literature review, because of its costs, the decision for or against SEF is embedded within the broader structure of social inequality (van de Wiel, 2020). Beyond the financial and medical burden, the uncertainty about the

overall chances of success could be another constraint on the desire to use SEF (Mertes & Pennings, 2011; Milman et al., 2017).

We assume that, in addition to the direct benefits and constraints of the desire to use SEF, motivations for such decisions are also shaped by broader social and personal norms (Bazzani et al., 2025; Beham-Rabanser et al., 2024; Bujard et al., 2023; Nauck, 2007). First of all, we take the impact of normative considerations into account (Opp, 1999; Sunderer & Rössel, 2012). Social pressure, especially by other household members, family, and friends, is generally seen as an important influence on fertility. Two types of social norms can be distinguished: injunctive and descriptive (Nolan et al., 2008). Injunctive social norms represent beliefs about what other people think one should do (Ajzen, 2012). They can motivate behavior due to expected approval by others. They can also be constraining, because they prohibit certain behaviors. Previous research on the influence of injunctive social norms on fertility and assisted reproduction indicates their relevance (Balbo et al., 2013; Bujard et al., 2023). Descriptive social norms are defined as beliefs about how other people behave in a certain situation (Nolan et al., 2008). These beliefs provide information about appropriate behavior and therefore function as a behavioral constraint. At the societal level, a strong descriptive norm exists, since approximately 80% of women give birth to at least one child (Sobotka, 2011). However, there is also research showing the social contagiousness of fertility in different societal contexts, underlining the importance of descriptive norms for fertility decisions (Balbo & Barban, 2014; Buyukkececi et al., 2020).

Beyond the direct benefits, constraints, and the individual perception of descriptive and injunctive norms, there is evidence that reproductive decisions and desires are shaped by more general background attitudes (Balbo et al., 2013; Bazzani et al., 2025; Lesthaeghe, 2015; Miller, 1994). We focus especially on gender role attitudes and career orientations, because they have been shown to be especially important for attitudes and desires toward reproductive decisions, and also touch upon the motivations that were discussed in the empirical research on SEF.

In sum, the RCT model proposed here considers the following variables as possible explanatory factors for the desire to use SEF: (a) benefits in autonomy and gender equality in reproductive decisions, benefits concerning career opportunities and benefits concerning having more time to find a suitable partner; (b) economic and medical burdens of SEF as specific constraints as well as perceptions of success of SEF; (c) individually perceived injunctive as well as descriptive social norms; and (d) background attitudes on gender norms and careers. Based on this broad theoretical approach, we could specify more clearly which of the aforementioned motivations and constraints are of higher or lesser relevance for the explanation of the desire to use SEF in the young and educated population we study. Concerning the relationship between the different predictors studied, we assume a funnel of causality according to the empirically well-established compatibility principle in social psychology. It assumes that the covariation between the independent and the dependent variable is higher if the specificity of the measured attitude, desire, or behavior is on a corresponding level. Therefore, the more specific costs and benefits directly related to SEF should have a stronger impact on the desire for SEF compared to the more general background attitudes that shape the more specific beliefs about costs and benefits (Ajzen & Fishbein, 1977). This assumption will be tested in a mediation analysis.

We thus formulated the following RQ:

RQ: Considering particular benefits, specific constraints, social norms, and background attitudes, which are the most important motivations and constraints relating to the desire to use SEF in the future among young and educated women?

3. Empirical Data

The data used for our analyses are based on an online survey conducted among female and non-binary university students at a BA, MA, and PhD level at the UZH in 2023. We consider this specific sample highly interesting with regard to the topic because (a) respondents are pursuing tertiary education, which statistically makes them particularly prone to late or absent motherhood and to considering SEF (Lockwood, 2011; Schmid et al., 2025; Sobotka, 2011), and (b) at the time of the survey they are largely still in an age group that is ideal for egg freezing from a medical point of view. Using the university's mailing list, 11,939 students were invited to fill out the questionnaire, of which 1,100 students participated, and 805 filled out the survey entirely. It is important to note that the respondents read a description of SEF, including information on the procedure and costs, before answering the questions we use to operationalize our main variables (see Appendix A in the Supplementary File).

A comparison with official university statistics (UZH, 2024) indicates a high degree of alignment in terms of level of study between the respondents and the overall student population: 48% of our participants were BA students (UZH: 52%), 30% MA students (UZH: 27%), and 22% PhD students (UZH: 19%). However, the distribution by study program deviates from the overall student population: While law and medicine are among the largest faculties at UZH, students from social sciences are overrepresented in our sample and form the largest group. This suggests a disciplinary bias, possibly reflecting differing levels of interest or awareness regarding the topic. Students with a stronger interest in fertility or future family planning may have been more inclined to take part, which could lead to an overestimation of the level of the desire to use SEF. Nevertheless, the sample remains highly relevant for understanding the motivations and constraints of those most likely to engage with the topic.

The dependent variable in all of our analyses is the desire to use SEF ("Can you imagine using social freezing personally in the future?"). The desire could be indicated on a 5-point Likert scale ranging from *no, absolutely not* (1) to *yes, in any case* (5) with steps of *rather no* (2), *maybe* (3), and *rather yes* (4).

In conceptualizing the underlying questionnaire, we aimed to cover the different benefits, constraints, norms, and background attitudes discussed in the literature review that might influence the decision for or against SEF. Background attitudes include being career-oriented as well as gender role attitudes. The index for career orientation draws on concepts from existing work on career commitment and work values (e.g., Greenhaus, 1971, 1973). It is based on both subjective career orientation (5-point scale from not being career-oriented to being career-oriented) and the importance of job and career, professional activity, promotion opportunities, and a high income (Cronbach's $\alpha = 0.81$). Higher values always correspond to being more career-oriented (scale range 1 to 5).

The index measuring gender role attitudes consists of a series of established items relating to the parent-child relationship and the division of care work. They were largely adapted from established surveys such as the International Social Survey Programmme (see Braun, 1999), with additional items on same-sex

and single-parent families developed by the authors to reflect contemporary family diversity. We used principal components analysis and Cronbach's α to assess different aspects of our indices. Principal components analysis was applied to explore the underlying structure of the items and to ensure that they load onto a single component, indicating unidimensionality. Cronbach's α was then used to assess the internal consistency of the items within each index. Since unidimensionality is a prerequisite for meaningful interpretation of Cronbach's α, using both methods in conjunction is a well-established practice (see, e.g., Tavakol & Dennick, 2011). After conducting principal components analysis, one item was removed since it did not yield consistent results in any constellations, and the remaining items were combined into an index (Cronbach's $\alpha = 0.78$). Higher values correspond to non-traditional and lower values to traditional gender norms (scale range 1 to 5). Descriptive statistics of the indices are shown in Table 1; the corresponding items for each index are in Table B of the Supplementary File.

In operationalizing injunctive and descriptive norms, we follow the standard procedures which are usually used in research (Nolan et al., 2008): With respect to injunctive norms, we asked respondents for their individual perceptions of the normative expectations of different reference groups in their environment. The internal reliability is acceptable, with a Cronbach's α of 0.6—this value could not be increased despite checking the item-total correlations. To operationalize descriptive norms, we asked respondents if people in their environment have already used SEF. This is in line with research on the contagiousness of reproductive decisions (Buyukkececi et al., 2020).

Table 1. Descriptive statistics of indices used.

Index	No. of items	Mean (*SD*)	Min	Max	Valid *N*	Cronbach's α
Career orientation	5	4.05 (0.64)	1	5	856	0.81
Gender roles	7	4.26 (0.60)	1	5	819	0.78
Autonomy benefits	5	4.17 (0.65)	1	5	1,000	0.74
Economic benefits	2	3.06 (1.27)	1	5	918	0.77
Partner benefits	1	3.26 (1.48)	1	5	917	—
Financial constraints	1	2.57 (1.16)	1	5	835	—
Medical constraints	1	2.29 (1.00)	1	5	773	—
Success rate constraint	1	2.76 (1.02)	1	5	787	—
Injunctive norm	6	3.23 (0.59)	1	5	829	0.60
Descriptive norm	1	% Yes (1–2) 10.81	1	3	1,024	—

The most specific level operationalized in our study is the level of specific benefits and constraints that women could associate with SEF. Benefits include reproductive autonomy and gender equality, economic benefits in the form of career opportunities, and more time to find a suitable partner. Benefits concerning autonomy and gender equality in reproductive decisions were operationalized with five items (see Table B in the Supplementary File; Cronbach's $\alpha = 0.74$), economic benefits with two items (Cronbach's $\alpha = 0.77$), and time to wait for a suitable partner with one item.

The specific constraints were all operationalized by a single-item measurement of economic and medical burdens and the importance of the success rate of SEF. In addition to the theoretical variables in the broad rational choice model, we also included several control variables to account for the socio-demographic

composition of the sample, which was mentioned as a correlate of using SEF in previous literature (see Section 2). We include the study level (BA, MA, PhD), age in years, relationship status (single, in a relationship), and sexual orientation (heterosexual, lesbian, asexual/aromantic, bisexual). Control variables were selected based on theoretical and empirical considerations related to reproductive decision making. Age and level of study were included as they are closely tied to life course timing and family planning. Relationship status was controlled for because, as previously discussed, one of the main drivers for considering SEF is the absence of a suitable partner. Sexual orientation was included due to existing legal restrictions on access to assisted reproductive technologies in Switzerland, where treatments are often limited to married (heterosexual) couples. Additionally, prior research has shown that non-heterosexual individuals face more complex family planning decisions, which may influence their reproductive intentions and consideration of SEF (e.g., Mamo, 2007).

The respondent's mean age is 26 years, with the youngest respondent being 18 and the oldest 67 years old (descriptive statistics of the sample are in Table C in the Supplementary File). The vast majority identify as female (99%), and only a few respondents identify as non-binary (1%). Concerning their relationship status, 60% are in a relationship and 40% are single. Of those who indicate being single, 65% are (currently) not looking for a partner, while the remaining 35% are. Respondents who could not imagine using SEF were 48% (scale points 1 or 2), 27% could maybe imagine it, and the remaining 25% of respondents could imagine using it (scale points 4 or 5). Therefore, a sizable share of the respondents is willing to consider SEF in the future, highlighting the current salience of the topic. This is also confirmed by the fact that more than 10% of the respondents know a person who has already used SEF. The items on career orientation and gender norms exhibit a skewed distribution, as in most cases the mean value is above the midpoint of the scale, indicating that the studied young women are generally career-oriented and have non-traditional conceptions of gender roles. Examining the specific benefits, this skewed distribution is also true for the specific benefits of reproductive autonomy and finding a suitable partner. Notably, the different specific constraints exhibit relatively low average values, centered around the midpoint of the scale.

4. Empirical Results

We model the desire to use SEF by applying linear OLS regressions. Our analysis is structured to examine how different layers of factors influence a woman's consideration of SEF within a funnel of causality. We begin by including basic socio-demographic variables that inform us about the respondent's social position, such as age, level of studies, relationship status, and sexual orientation, in our first regression model. In the second model, we add variables capturing broader attitudes related to career orientation and gender roles. In the third model, we introduce more specific factors: the benefits and constraints that respondents associate with SEF. We assume that these specific perceptions not only directly affect the decision but also mediate the influence of the broader attitudes. In our fourth model, we further enrich the analysis by including descriptive and injunctive norm variables, which we expect will directly affect the outcome. To further explore the mediating role of the benefits and constraints, we use the Baron and Kenny (1986) approach. This step-by-step approach enables us to disentangle the direct and indirect effects of various factors on the consideration of SEF. The regression analyses are based on 619 respondents who provided complete data on all included variables, ensuring the observations remain constant across all models.

4.1. Regression Results

The results of our regression models are presented in Table 2. In our interpretation of the results, we follow the stepwise procedure of the statistical analysis outlined earlier. Model 1 shows the results with respect to socio-demographic variables. As the adjusted R^2 shows, the included socio-demographic variables do not contribute to the explanation of the desire to use SEF in an important way. Most of the coefficients are very small, while the responding p-values tend to be high and hint at a lack of significant results, except for the study level. PhD students, in contrast to BA or MA students, have a higher probability of considering SEF.

Table 2. OLS regressions with consideration of SEF as the dependent variable.

	Model 1	Model 2	Model 3	Model 4
Injunctive norm				0.363*** (0.063)
Descriptive norm				
Yes, one person				0.246 (0.128)
Yes, several people				−0.252 (0.204)
Benefits				
Autonomy			0.214** (0.074)	0.202** (0.072)
Economic			0.346*** (0.039)	0.320*** (0.038)
Partner			0.131*** (0.028)	0.120*** (0.027)
Costs/constraints				
Financial burden			−0.137*** (0.032)	−0.114*** (0.031)
Medical burden			−0.062 (0.038)	−0.067 (0.037)
Success rate			0.140*** (0.037)	0.126** (0.037)
Background attitudes				
Gender norms		0.160* (0.075)	0.039 (0.060)	0.029 (0.058)
Career oriented		0.427*** (0.075)	0.129* (0.061)	0.153** (0.059)
Study level (0 = BA)				
MA	0.092 (0.116)	0.037 (0.113)	0.053 (0.089)	0.008 (0.086)
PhD	0.287* (0.142)	0.169 (0.139)	0.107 (0.109)	0.032 (0.106)
Age	−0.003 (0.011)	0.004 (0.011)	0.001 (0.008)	0.010 (0.008)
Relationship status (0 = single)				
In a relationship	−0.067 (0.102)	−0.094 (0.099)	0.100 (0.079)	0.075 (0.077)
Sexual orientation (0 = heterosexual)				
Lesbian	−0.466 (0.254)	−0.413 (0.247)	−0.302 (0.196)	−0.225 (0.191)
Asexual/Aromantic	−0.102 (0.480)	−0.009 (0.466)	0.086 (0.367)	0.177 (0.357)
Bisexual	0.063 (0.129)	0.113 (0.126)	0.053 (0.099)	0.110 (0.097)
Adj. R-squared	0.003	0.063	0.425	0.458
Observations (N)	619	619	619	619

Notes: Standard deviations in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

They are typically in a different stage of life; in Switzerland, they are usually gainfully employed and age-wise closer to the mean age of family formation. Of the socio-demographics, the effect size is the biggest for lesbian respondents, which seems to reduce the desire to use SEF. Both the study level and sexual orientation tend to decrease in effect size when the background attitudes are entered in Model 2.

In Model 2, we integrate the background attitudes on career orientation and gender roles. These two variables are more consequential for the desire to use SEF compared to the socio-demographic variables, as the increased adjusted R^2 of 0.063 indicates. Career orientations are particularly important for the formation of this desire. Gender roles seem to be less important, considering the smaller effect size, especially after we enter the specific benefits and constraints in Model 3.

In Model 3, we add the specific benefits and constraints to our statistical explanation. Since they are, according to the compatibility principle, theoretically much closer to the formation of the desire to use SEF, the explanatory power of the model jumps to an adjusted R^2 of 0.425, indicating a very strong relationship. All three variables capturing the specific benefits of SEF are highly statistically significant.

For instance, tangible benefits like enhanced career prospects and finding a suitable partner have robust positive effects, while the perceived benefits of greater autonomy and the promotion of gender equality also add to women's willingness to consider SEF. Thus, not only do tangible benefits matter to young women, but also the perspective of increased normative benefits coming with SEF. In addition to the specific benefits, the specific constraints also matter for the consideration of SEF. Financial considerations are a critical determinant: The financial burden substantially decreases the likelihood of using SEF, while the uncertainty around the probability of success in the treatment contributes positively to the decision. In contrast, the medical burden appears to have only a modest negative impact, if at all, not reaching any significance in Model 3 and in Model 4. This is a noteworthy result, given the particularly burdensome nature of the medical process of extracting egg cells.

In Model 4, we enter, in addition to the specific benefits and constraints, also the subjectively perceived injunctive and descriptive social norms. They clearly contribute to the explanation as the adjusted R^2 rises from 0.425 to 0.458, which is mainly explained by the injunctive norm. Therefore, the acceptance of SEF in one's social environment plays a role in considering the freezing of egg cells. The effect of descriptive norms is overall somewhat lower, but it still highlights the importance of exemplary behavior and role models in one's social context for fertility considerations.

4.2. Mediation Analysis

Since some of the coefficients in Model 2 lost significance (e.g., gender roles) when adding the specific benefits and constraints in Model 3, we additionally looked for mediating effects of these benefits and constraints. In doing so, we used the classic Baron and Kenny (1986) approach by testing the effects of the independent variables (gender role attitudes and career orientation) on the specific benefits (reproductive autonomy and career benefits) first and then including both in a regression considering SEF as the dependent variable. In this framework, mediation is present when: (a) the independent variable significantly influences the mediator; (b) the independent variable significantly affects the dependent variable when the mediator is not included; (c) the mediator itself has a significant impact on the dependent variable; and

(f) the influence of the independent variable on the dependent variable decreases once the mediator is added to the model. Although this method is well-established in sociological research, some, such as Zhao et al. (2010), now argue that the only requirement is that the independent variable's effect on the dependent variable lessens with the inclusion of the mediator. This is already given with the results of Models 2 and 3.

Because the specific benefits and constraints are theoretically much closer to the formation of the desire to use SEF, we expect the effect of gender role attitudes (independent variable) to be mediated via the benefits relating to reproductive autonomy (mediator) and the background attitudes on career orientation (independent variable) to be mediated via the economic benefits (mediator). A causal diagram visualizing these potential effects can be taken from Graph D in the Supplementary File.

For the effect of gender role attitudes, the assumption of the reproductive autonomy benefit as a mediator can be confirmed: (a) Having less traditional gender role attitudes has a significant positive effect on seeing SEF as a way to increase reproductive autonomy, (b) while gender role attitudes have a significant effect on considering SEF itself and (c) the reproductive autonomy benefit affects considering SEF, (d) this significance vanishes entirely, and the effect size is strongly diminished when adding the specific benefit of reproductive autonomy into the equation (as seen in Table 1).

For career orientation and economic benefits as a potential mediator, the step-by-step analysis also confirms mediation, though less strongly: (a) Being career-oriented clearly has a positive and highly significant effect on perceiving career benefits in SEF; (b) career orientation also influences SEF decisions, with individuals who are more career-oriented considering using it more strongly at a statistically highly significant level; (c) economic benefits have a significant impact on considering SEF; (d) when adding the specific economic benefits to the model, the coefficient of career orientation decreases by approximately 0.30 scale points, however, it remains statistically significant throughout all models (as opposed to gender role attitudes).

4.3. Robustness Checks

With the regression models including a large number of variables, we were confronted with a number of robustness concerns that we would like to point out in this section and further explain how we handled these situations. While we included women of all ages and those who already have children in all of our analyses, as they may still have individual desires relating to SEF, we suspected them to have generally lower desires. When removing women over the age of 35 and those who already have children from the regression, age has a weak (0.051) but significant positive effect ($p = 0.002$). We therefore looked at age in groups as categorical variables, but no consistent picture emerged, and p-values dropped immensely. We then checked for a potential curvilinear effect of age, as SEF might be of most interest to those who are old enough to be thinking about their reproductive future but have not yet reached an age where the issue has become obsolete. When included as a quadratic term, age shows a very weak (−0.009) but significant ($p = 0.004$) inverted U-shape (concave) effect. Furthermore, whether or not respondents already have children is not considered separately in the analyses because the number of respondents with children is very low (less than 5%). We calculated models with and without this group, and it did not influence our overall results in an important way.

Mediation is often tested by conducting a Sobel test to further evaluate whether the indirect (mediated) effect is statistically significant. The fact that our independent variables are not normally distributed at all made this step redundant because the test assumes normal distribution. Instead, we used bootstrapping to obtain standard errors, *p*-values, and confidence intervals. We used 1,000 bootstrapped samples as recommended by Preacher and Hayes (2008). For Model A, bootstrapping produced an indirect effect with a 95% confidence interval that did not include zero, indicating that the effect of gender role attitudes on considering SEF is significantly mediated by the perceived benefit of increased reproductive autonomy. Similarly, for Model B, the bootstrapped confidence interval for the indirect effect of career orientation (via the benefit of being able to focus on one's career) did not include zero. This provides robust evidence that the mediation effects are statistically significant in our sample of female university students.

5. Discussion and Conclusion

5.1. Discussion

This study enhances our understanding of the decision-making process surrounding social egg freezing by integrating different drivers of this process within a broad rational choice framework. This framework incorporates background attitudes—such as career orientation and gender role attitudes—normative influences like injunctive and descriptive norms, and specific benefits and constraints, including increased reproductive autonomy, economic advantages in the form of improved career prospects, and a longer period to find a suitable partner on one side, against financial and medical insecurities on the other. This approach allowed us to investigate how these specific determinants interweave with broader attitudes, prevailing social norms, and patterns of social stratification, thereby clarifying which motivations and constraints are most relevant in explaining the desire to use SEF. This is among the first studies to employ a standardized design, enabling us to quantify the strength of various factors shaping the desire to use SEF in the future. In addition, we were able to study this in a prospective design because our study population consisted of young women mainly before their age of family formation.

To answer our RQ, we employed linear OLS regressions alongside the Baron and Kenny (1986) step-by-step approach to disentangle the direct and indirect effects of various factors on SEF consideration, with additional bootstrapping providing robust estimates and confidence intervals for the mediator effects.

Our analysis of female and non-binary students at the UZH indicates that while basic demographic factors (such as age, study level, or relationship status) have only a modest influence, likely due to our relatively homogeneous sample, only lesbian students show a lower desire to use SEF in the future. This is in line with results that show that lesbian persons usually have a lower inclination to raise a family (Baiocco & Laghi, 2013; Riskind & Patterson, 2010). In addition, this could also be attributed to the rather restrictive legal context for same-sex parents in Switzerland (see Chautems & Roca i Escoda, 2025). In contrast, the desire to use SEF is strongly driven by a balance between costs and benefits. In particular, perceived benefits related to reproductive autonomy, enhanced career opportunities, and an extended window to find a partner strongly motivate SEF consideration, whereas the financial burden acts as a significant deterrent. Given that SEF is comparatively expensive in Switzerland and not covered by medical insurance, the salience of financial constraints in our sample is understandable. Interestingly, the medical burden did not significantly affect SEF consideration, a finding that may reflect both the limited information provided about the

procedure in our questionnaire and Baldwin's (2019) observation that users view SEF as a short-term sacrifice in pursuit of long-term family goals. Additionally, it was unexpected that uncertainty about the chances of success of SEF had a positive effect on consideration.

Moreover, while background attitudes regarding gender roles and career orientation are important, their effects are (partially) mediated through specific cost–benefit evaluations. Gender roles play a smaller role, which may be due to the rather low variation of gender role attitudes among female university students. Essentially, the decision to use SEF is less about demographic characteristics and broader attitudes and more about how women weigh practical and normative incentives against financial risks and perceived probabilities of success embedded within a broader framework of attitudes on gender roles and career orientation.

Our findings align with and expand upon earlier research discussed in the literature review. The primary motivations noted in previous studies—fear of running out of time (Baldwin et al., 2019), difficulties in finding a suitable partner (Inhorn, 2023), and career and financial considerations (Kanters et al., 2022)—were confirmed as important drivers of SEF consideration. Prior research has also underscored the dual influence of personal aspirations and external pressures (Ajzen, 2012; De Proost & Coene, 2019; Nolan et al., 2008; Rottenberg, 2017) in shaping reproductive decisions. Our research not only reaffirms these factors but also demonstrates the mediating role of specific benefits, such as reproductive autonomy, finding a suitable partner, and career opportunities, thereby offering a more nuanced understanding of SEF decisions among young, educated women. Especially the normative benefit of increased reproductive autonomy, which goes beyond tangible benefits, was of substantial importance for the desire to use SEF.

Despite its contributions, this research is not without limitations. The relatively homogeneous sample of university students limits the generalizability of the findings, and future studies would benefit from examining a more diverse population. Furthermore, while the proposed statistical relationships between socio-demographic variables, background attitudes, specific benefits and constraints, and the desire to use SEF are theoretically coherent and plausible, we are not able to demonstrate the causal direction of these relations. In contrast to our cross-sectional sample, this would necessitate a longitudinal perspective on the process of decision making. In the overall interpretation of the findings, it is important to consider the rather restrictive legal context in Switzerland, which also limits the actual utility of SEF, as the preserved eggs can only be used within married couples in cases of infertility. Therefore, the overall attractiveness of SEF for young women might be comparatively low in Switzerland. With SEF use on the rise, time will reveal whether the procedure can effectively counteract age-related fertility decline. Currently, few women return to their frozen eggs, with many eventually disposing of them (Fuscaldo et al., 2025). However, with the impending legalization of egg donation in Switzerland (The Federal Council, 2025), the needs of infertile women and the surplus of frozen eggs might, depending on the final legislation, align more closely. Decisions regarding egg freezing and medically assisted reproduction remain highly relevant amid increasing infertility rates, and our study provides a foundation for further research in this field.

5.2. Conclusion

Overall, by shedding light on the multifaceted determinants of SEF intentions, this study deepens our understanding of contemporary reproductive choices and invites further discussion on how social and economic policies can better support women's autonomy and career aspirations in modern family formation.

With a standardized and prospective research design focusing on young women before family formation, we were able to show that specific benefits—such as career perspectives, finding a suitable partner, and increasing reproductive autonomy—strongly shape the desire to use SEF. On the other hand, specific costs, especially the financial costs of the procedure, also play a significant role. Socio-demographic variables are of lesser importance, and more general background attitudes on gender roles and career orientations are mainly mediated by the more specific benefits and costs.

Acknowledgments

We are grateful to the anonymous reviewers for their constructive feedback and to Ulf R. Hedetoft for his editorial guidance. We also thank Heike Trappe and Anne-Kristin Kuhnt for their work in curating this important collection on medically assisted reproduction.

Funding

This work was supported by the University Research Priority Program Human Reproduction Reloaded of the University of Zurich, Switzerland. Publication of this article in open access was made possible through the institutional membership agreement between the University of Zurich and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interest. In this article, editorial decisions were undertaken by Ulf R. Hedetoft (University of Copenhagen, Denmark).

Data Availability

The data used in this study were collected as part of Nadja Colombini's MA thesis. While the thesis is available via the Supplementary File, the underlying dataset is not publicly available due to privacy and ethical considerations. Interested researchers may request access to the data by contacting the corresponding author.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2025 • Volume 13 • Article 10420
https://doi.org/10.17645/si.10420

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Open Access Journal

Social Disparities Across Different Stages of Medical Help-Seeking to Have a Child in Germany

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Submitted: 28 March 2025 **Accepted:** 2 July 2025 **Published:** 21 August 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Delayed childbearing has led more individuals and couples to seek medical help for conception in many European countries. In accordance with a stratified reproduction perspective, there is evidence of social disparities concerning who seeks medical help to become pregnant. However, it remains unclear whether and how disparities vary across different stages of the help-seeking process. This article provides novel evidence on the degree of disparities and associated factors involved in the process of medical help-seeking to have a child by stage, distinguishing between consulting a doctor, receiving medication, and getting more advanced treatments such as in vitro fertilization. Using wave 1 of the German Family Demographic Panel Study (FReDA), a novel and large data source, we examine women and men aged 18–50 using partial proportional odds models. Women reported a higher lifetime prevalence of help-seeking (12.3%) than men (8.0%), primarily due to greater use of medication. We found that two of four indicators of social stratification were associated with help-seeking (income and marital status, but not education and migration background). Women and men with higher household income and those who were married were more likely to seek medical help. Less-intensive infertility treatment is free, but advanced treatments are expensive, and only married couples are eligible for partial reimbursement. We had therefore expected to find stronger associations for both variables for advanced treatments, which was not the case. This suggests that, even though financial considerations were important, selection into treatment may also be related to other factors, including cultural and knowledge-based factors.

Keywords

assisted reproductive technologies (ART); FReDA survey; Germany; infertility help-seeking; medically assisted reproduction (MAR); social inequalities

1. Introduction

Fertility problems can occur at any age, but delayed childbearing has resulted in an increased risk of experiencing age-related infertility and, therefore, an increased need for medical help to conceive in many developed countries. Assisted reproductive technologies (ART), such as in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI), are now broadly available in high-income countries. Usage of ART treatments in Europe is rising (Smeenk et al., 2023). Reasons for this increase include improvements in medical technology, improved access to these treatments due to increased financial support of patients, and the opening of access to subgroups that have been excluded previously, such as same-sex couples or single women (Calhaz-Jorge et al., 2020).

Assurance of universal access to sexual and reproductive health care is an important part of the sustainable development agenda of the United Nations. Although infertility treatment is not explicitly mentioned in the SDGs themselves, there appears to be some agreement that these goals should include "access [to] services for prevention, management, and treatment of infertility" (Starrs et al., 2018, p. 2645). Despite improvement in access, studies continue to show social disparities in the use of ART across high-income countries, particularly concerning income, social deprivation, educational background, and race/ethnicity (Brautsch et al., 2023; Chambers et al., 2013; Goisis et al., 2024; Messaoud et al., 2023; Seifer et al., 2022; Tierney et al., 2024). These findings suggest the existence of "stratified reproduction" (Colen, 1986) in the use of ART, where "the role of access and costs is key" (Riley, 2018, p. 126). Employing a stratified reproduction perspective adds to our understanding of how reproduction via medical help is embedded in social structural and country contexts.

To ensure equitable access to fertility care, it is essential to identify the mechanisms through which disparities arise and the points at which they occur. This requires an understanding of help-seeking as a process, recognizing that medical help-seeking is not limited to ART. Typically, the help-seeking process begins with consulting a doctor about difficulties conceiving, followed by less invasive interventions such as receiving medication, and possibly leading to surgery and/or ART. Most existing research, however, has reduced the complexity of this process to a simple dichotomy of help-seeking versus not help-seeking. Furthermore, studies have varied as to what threshold they established to divide *not seeking help* from *help-seeking* (e.g., consulting a doctor or having had IVF/ICSI), sometimes leaving it up to the respondent to determine what counts as help-seeking (Passet-Wittig & Greil, 2021).

This binary approach to measuring medical help-seeking hides potential differences in social disparities at different help-seeking stages. People frequently drop out of treatment before starting ART (Messaoud et al., 2024). We expect that the relevance of various social stratification variables will depend upon the stage of treatment examined. There is reason to expect access to care to become increasingly unequal as the treatment process progresses, particularly as interventions grow more expensive, invasive, and time-consuming. It is therefore likely that the role of economic, social, and cultural resources will become more important in determining who receives treatment at later stages of help-seeking. In this study, we therefore distinguish between four stages of medical help-seeking: no help-seeking, consulting a doctor, receiving medication, and undergoing advanced treatments such as artificial insemination, IVF, and ICSI.

Studies documenting disparities across different treatment stages have come almost exclusively from the US (e.g., Crawford et al., 2017; Greil et al., 2011; Janitz et al., 2019; Tierney et al., 2024), with a few exceptions from European countries (e.g., Brautsch et al., 2023; Köppen et al., 2021; Oakley et al., 2008; Terävä et al., 2008). This is problematic because country context matters for understanding social determinants of the use of medical help to conceive. Policies regulating the delivery of services and access to these services vary by country (Passet-Wittig & Bujard, 2021). Differences in use of medical help to conceive also reflect variation in cultural acceptance of assisted reproduction and patterns of fertility behaviors (Präg & Mills, 2017). The variation among countries reinforces the need for country-specific analyses and for interpreting findings on the associations between social characteristics and help-seeking stages within the country context.

In this study, we investigated the lifetime prevalence of medical help-seeking to conceive a child and the role of various social determinants in producing disparities. Specifically, we studied whether social determinants (especially education, migrant status, household income, and marital status) differ in their association with help-seeking across different stages of treatment. For this purpose, we used data from wave 1 of the German Family Demographic Panel Study (FReDA), a novel survey with a large sample size (over 20,000 respondents), which is necessary for the analysis of uncommon outcomes. We used a general population sample of women and men of reproductive age because we aimed to provide a comprehensive picture of those seeking medical help to have a child in this population. We consider Germany to be an example of a country with a high need for treatment, a rather restrictive regulation of access to ART, and high out-of-pocket expenses for many users.

2. Background

2.1. The German Context

We begin with a brief discussion of the German context surrounding help-seeking to conceive a child. With total fertility rates between 1.2 and 1.6 since German unification in 1990 (1.38 in 2023), Germany can be characterized as a country with very low fertility (Destatis, 2024c). This low fertility rate partly reflects the high share of women who remain childless (21%) and the steadily increasing age at first birth (30.2 years in 2023) (Destatis, 2024a). Delays in the first birth contribute to an increased risk of experiencing infertility, which is reflected in the increasing age of women and men who make use of ART (Bartnitzky et al., 2024).

The rate of ART use in Germany has increased considerably since 1990 (Bartnitzky et al., 2024). The first legal regulation of ART was implemented in 1990 in the Embryo Protection Law (*Embryonenschutzgesetz*), which is still in place. Germany lags behind countries like Austria and Switzerland in updating regulations to accommodate technological advancements, cultural change, and increasing ART use. German laws now allow heterosexual and lesbian couples, as well as single women, to use ART. Because surrogacy is not allowed in Germany, gay men were excluded as potential users by law. Egg donation is also not allowed in Germany.

Germany presents an interesting case for the study of medical help-seeking because reimbursement of costs for advanced treatment is only partial for the majority of Germans who have statutory health insurance (88% of the workforce in Germany; Destatis, 2024b). Fertility treatments are performed at specialized fertility clinics. Before going to a specialized clinic, it is common for female patients to see a gynecologist and male patients a urologist. Medical advice, diagnostics, and less invasive treatments, including medication, are offered by these physicians, and these treatments are typically free of cost for the patient. Reimbursement

for medical help-seeking to conceive in Germany is limited by statute to couples consisting of married different-sex partners. Women must be between 25 and 39 years old, and men between 25 and 49 years old. Only 50% of costs for a treatment cycle of ART and artificial inseminations are reimbursed for a maximum of three cycles per child. Treatments with donor sperm are not covered. An IVF cycle can cost up to 3000 EUR, resulting in considerable out-of-pocket expenses. Private health insurance is often more generous in cases where the insured partner has an infertility diagnosis. Based on its legislation, Germany can be characterized as more on the restrictive side with regard to access and reimbursement of treatment costs compared to other European countries (Calhaz-Jorge et al., 2020).

2.2. State of Research

In this section, we review the scattered empirical evidence on social disparities in the use of medical help-seeking to have a child. A recent review on medical help-seeking in developed countries covering the period from 1990 to 2019 identified five categories of determinants of persons or couples seeking medical help to get pregnant: socio-demographic, socio-economic, reproductive history, attitudes, and psychological factors (Passet-Wittig & Greil, 2021). From this review, it is evident that most research has centred on socio-demographic, socio-economic, and reproductive history variables, focusing on a few specific variables, including age, number of children, race/ethnicity, and indicators of socio-economic status such as education, income, and health insurance. Fewer studies explored the role of relationship status or gender in help-seeking, in part because analytical samples usually included only women. As we took a stratified reproduction perspective in this study, we focused on conventional social stratification variables such as education, income, and migrant status. We also considered relationship status because it defines access to reimbursement of treatment costs. We first summarize existing evidence regarding stratified reproduction among those seeking medical help for infertility with an emphasis on recent studies.

We argued in the introduction that costs and affordability were important for understanding how patterns of use of ART and other medical treatments were shaped. Another, more indirect selection mechanism relates to differences in knowledge and health behaviours between social, cultural, or ethnic groups, which were also important for accessing and using medical help. While income is mostly concerned with affordability, education and migrant status relate more to the second mechanism, but of course, both are closely intertwined.

Evidence from a variety of countries has revealed an educational gradient in medical help-seeking, with more highly educated women (Brautsch et al., 2023; Chandra et al., 2014) and men (Datta et al., 2016) being more likely to seek medical help. There is inconclusive evidence, mostly from US studies of women, about the association of education with the utilization of specific treatment types (Greil et al., 2011; Tierney et al., 2024).

There is evidence from US studies among women of an association between racial and ethnic minority status (e.g., those identifying as Black, Hispanic, and Native American) and lower rates of medical help-seeking compared to people who identify as White (e.g., Crawford et al., 2017; Janitz et al., 2019; Tierney et al., 2024). Some US studies, however, did not find such an association (e.g., Kelley et al., 2019; Weller, 2015). There is less quantitative research available on European samples, and the results have differed by study and country. A Danish study provided descriptive evidence that migrants were less likely to use ART as their first treatment (Brautsch et al., 2023). Similarly, a German study showed that migrants

were less likely to seek medical help, controlling for self-perceived infertility status (Milewski et al., 2025), while another German study found no difference by migrant status (Köppen et al., 2021). One US study examined treatment stages and found differences among ethnic groups for ART but not for lower treatment stages, even when controlling for income, education, and other socio-demographic variables. It is very likely that the association between race/ethnicity or migration background and help-seeking is mediated by other socio-economic factors (Greil et al., 2011), including income and education, which likely contribute to the conflicting evidence.

Many studies show that higher household income is associated with higher odds of help-seeking. Several US studies of women found a link between income and help-seeking, with stronger associations at more advanced treatment stages (Farland et al., 2016; Kelley et al., 2019; Kessler et al., 2013). Nevertheless, even in countries with partial or full coverage of treatment costs—such as Denmark (Brautsch et al., 2023), France (Messaoud et al., 2023), and Germany (Köppen et al., 2021)—income-based disparities in medical help-seeking have persisted. The availability of health insurance that covers infertility treatment, more common among those with higher incomes, also has strong associations with help-seeking in the US (Passet-Wittig & Greil, 2021).

Relationship status is not typically viewed as an indicator of social stratification, but it is highly relevant in the German context due to regulations on reimbursement. There is evidence from studies on help-seeking in different countries such as the U.S., United Kingdom, Australia, Canada, and Germany showing that married women and men were more likely to seek medical help (Bushnik et al., 2012; Chandra et al., 2014; Datta et al., 2016; Köppen et al., 2021; Marino et al., 2011). The few studies from the US that include a measure of relationship status indicated that those who were married have higher odds of undergoing more invasive treatments, including ART, insemination, and surgery (Chandra & Stephen, 2010; Greil et al., 2011).

Previous studies have used different analytic samples, often without explicitly justifying their choice (Passet-Wittig & Greil, 2021). For example, many studies have used samples of people who were in need for treatment, i.e., those who were infertile, thereby potentially excluding certain groups such as same-sex couples, single women, people who know they have a reproductive barrier and skip the required twelve months of trying, as well as people with non-reproductive health barriers to having children (Andersen, 2017; Passet-Wittig & Greil, 2021). A stratified reproduction framework therefore suggests the value of a broadly inclusive sample to more fully understand the help-seeking experiences of those who seek medical help to have a child, but who would likely not be classified as infertile.

Most research on medical help-seeking to have a child has focused on women, but men also may have reproductive impairments, and a thorough clinical evaluation will usually involve both partners in a couple. The comparative lack of research including men is likely related to the fact that reproduction is often regarded as a woman's issue (Almeling, 2020; Barnes, 2014). The few studies of help-seeking that included both women and men have discovered that women were more likely to seek help than men (Belgherbi & de La Rochebrochard, 2018; Chandra et al., 2014).

Overall, prior research has suggested that reproduction through medical help-seeking is socially stratified. However, evidence on variation across treatment types remains limited. Conflicting findings across studies may partly result from differences in model specifications, such as which variables were controlled for.

Additionally, country-specific contexts likely play a key role, but these have rarely been considered when results have been interpreted and compared across studies.

2.3. Theoretical Framework and Working Hypotheses

We were guided theoretically by the Stratified Reproduction and Life-Course perspectives. The stratified reproduction perspective focuses on the ways in which reproduction is structured across social and cultural boundaries, empowering privileged women and disempowering less privileged women (Colen, 1986). The Life-Course perspective draws our attention to the ways in which social behavior, norms, and social interaction evolve across time (Elder et al., 2003). We draw more specifically from the Help-Seeking Model for Infertility by White et al. (2006). This model conceptualizes the help-seeking process as being determined by symptom salience, life course cues, attitudes, predisposing factors, and enabling conditions. In this study our focus is on enabling and predisposing conditions and life course cues. Enabling conditions focus on the (primarily economic) resources needed to seek medical help to have a child, while predisposing conditions were characteristics that influence inclinations to use health care services. Life course cues were factors that signal normatively appropriate times for life transitions, that make childbearing—and, thus, infertility and help-seeking—salient (Elder et al., 2003). These categories should be seen as heuristic tools; the model does not claim that a variable necessarily fits neatly into only one category.

Level of education is a fundamental social determinant of health (Mirowsky & Ross, 2017), linked to higher health literacy and greater health care utilization (Nutbeam & Lloyd, 2021; Zajacova & Lawrence, 2018). Understanding and navigating the treatment process and understanding complex reimbursement rules may be easier for those with higher education. Also, those with higher education may be more likely to have more educated friends and may receive more encouragement to pursue treatment. Furthermore, individuals with lower levels of education may face class-based discrimination by physicians and/or may come to feel that fertility treatments were not appropriate for people like them. In the help-seeking model, education is considered an enabling factor, though it could also be seen as a predisposing condition. We expect that more educated women and men were more likely to seek medical help, especially at advanced treatment stages.

Like education, migration background can be considered both as an enabling factor and as a predisposing condition. Some migrants, especially those from low- or middle-income countries, may have lower health literacy and knowledge about ART and how to access it in the German context. Additionally, some migrants may have different attitudes toward ART, which could be related to religious beliefs discouraging or defining norms for the seeking of medical help. Furthermore, some migrants may face bias and institutional barriers that serve to limit their ability to access healthcare institutions (Hardeman et al., 2018). We assume that, overall, migrants were less likely to seek medical help compared to those born in Germany.

MAR treatments were costly, and not everybody can afford them, particularly in contexts where there is no or only partial public support. Household income might also be associated with additional dimensions of social inequality in the seeking of medical help to have a child. For example, it is more difficult for couples in lower-income jobs to reconcile time-consuming treatments with their work schedules. In this study, we categorized household income as an enabling condition mainly because financial support for advanced treatments is only partial and patients have to pay out-of-pocket for at least a part of treatment costs. Given

that medical advice and medication were typically free of cost, we expected that the association with help-seeking would be strongest for advanced treatments.

Marital status is typically considered to be a cultural or life course cue to have a baby making help-seeking to have a child more likely for those who were married. Despite declining marriage rates in many societies, including Germany, the majority of children continued to be born to married couples—particularly in West Germany—indicating the continued, though weakening, influence of social norms favoring marital childbearing. In the German context, marital status can also be considered to be an enabling factor. This is because it is directly related to financial resources available to patients, as those not married when pursing advanced treatment have to pay the full treatment costs themselves. Whether marital status is considered as a cultural or life course cue or as an enabling condition, we would expect larger coefficients at the advanced treatment stage. This is because higher levels of treatment involve more economic and emotional cost; thus, it may require higher levels of security and commitment to overcome those costs.

3. Data and Methods

3.1. Data

In this study, we use data from the first wave of the new FReDA (Family Research and Demographic Analysis) panel, release v2.0.0 (Bujard et al., 2023; Schneider et al., 2021). FReDA is a large-scale representative survey of German residents 18 to 49 years with over 20,000 respondents. Wave 1 consists of three sub-waves: W1R, W1A and W1B. W1R is the recruitment wave and consists of basic socio-demographic information for 37,777 respondents of which 26,725 provided consent for participation in the FReDA panel. The content of one survey wave is divided into two complementary sub-waves with different questionnaires, waves W1A and W1B (for more details see the FReDA Data Manual). We used data from the recruitment wave W1R and wave W1A, which contains the fertility module and other variables of interest in this study; 22,048 women and men participated, giving us a response rate of 83%. Data for W1R and W1A was collected in 2021 using mainly self-administered web-based interviews and paper questionnaires. 23 cases could not be matched across sub-waves. The successfully matched data set (W1R and W1A) consists of 22,025 respondents.

Of these 22,025 respondents, 23 respondents were dropped either because information on their age was not available or because they were older than 50 years. 70 respondents were dropped either because no information was available on their gender or because they were categorized as "diverse," the category FReDA used to denote sexual identities other than "woman" or "man." There were too few diverse respondents to retain them as a separate category. From the remaining 21,932 observations, those with missing values on the dependent variable were dropped (291 people), leaving 21,641 observations. We would have preferred to treat missing values on explanatory variables as a separate category, but, with the exception of household income, these variables did not have enough missing cases to allow them to be treated in this way. Therefore another 373 observations (1.7%) were dropped because of missing values on any explanatory variables. The indicator for household income did include a category for item non-response, which accounts for 13.7% (n = 2,922) of the cases in the final data set. The final analytical sample consisted of 11,805 women and 9,463 men.

3.2. Variables

3.2.1. Dependent Variable

The dependent variable was based on a lifetime indicator for seeking medical help to have a child. The question asked to people about their own personal help-seeking was: Have you ever done any of these things to help you have a child? Please select all that apply. The question was followed by a list of treatments. The wording was exactly the same for women and men. Table 1 shows the dependent variable with all categories. The most common types of help-seeking were calculating fertile window and consulting a doctor, followed by receiving medication. For our final indicator of medical help-seeking, respondents were grouped into one of four categories based on the highest category of help-seeking mentioned: (0) *no help-seeking*, (1) *consulted a doctor*, (2) *received medication*, (4) *advanced treatment*. Respondents who only mentioned "other, none of the above" were grouped together with *none* as not having received medical treatment because it is unclear whether this category even refers to a medical treatment. Similarly, respondents who only mentioned "calculating fertile window" were grouped in the no-help-seeking category because it is not clear whether this refers to a diagnostic method or to the use of easily accessible online tools or apps to determine the fertile window, which we would not consider as medical help-seeking. We assume ordinality of these categories, which implies, for example, that people who had advanced treatments or received medication have also talked to a doctor. Note that the assumption of ordinality cannot be tested with the available data because we used a lifetime indicator for medical help-seeking so that combinations of treatment types may not be informative about specific treatment pathways.

Table 1. Lifetime indicator of medical help-seeking to have a child, all categories (in percentages).

	Types of medical help-seeking	Women	Men
0)	No help-seeking		
	None	75.6	83.9
	Other, none of the above	1.4	1.1
	Calculating fertile window	18.1	9.9
1)	Consulted doctor	9.6	6.6
2)	Received medication	7.5	3.6
3)	Advanced treatments		
	Surgery	1.3	0.5
	Artificial insemination	2.3	1.6
	In Vitro/micro-fertilization	3.3	2.6
	Other medical treatment	1.6	0.9

Notes: Shares add up to >100% because multiple responses were allowed in the original question. Source: FReDA W1: 11,805 women, 9,463 men.

3.2.2. Independent Variables

Our main explanatory variables were the social stratification variables education, migrant status, household income, and marital status. For the level of education, we used information on the highest general school-leaving certificate acquired in Wave W1R. General higher education entrance qualification (*Abitur*) or an entrance qualification for universities of applied science (*Fachabitur*) were considered as higher education,

whereas all other certificates were treated as lower education. Because only a few respondents were currently enrolled in education, we grouped them in the lower education category. Information on migrant status was taken from wave W1R. The binary indicator differentiates between migrants (1) and non-migrants (0), where migrants were those born abroad. We grouped answers to the monthly net *household income* (W1A) into four categories: ≤ 2000€, > 2000–3000€, > 3000€, and a separate category for respondents with missing information to retain cases. Marital status is a categorial indicator reflecting whether a person has ever been married to a partner of the same or other sex (2), ever had a partner but has never been married (1), or never had a partner (0). In FReDA, retrospective information is available for partnerships that lasted three months or more. Thus, people may have had short relationships that were not represented here.

We controlled for two variables known to be associated with seeking medical help to have a child and with the social stratification variables above: age and number of children. The risk of infertility increases with age, particularly for women; we therefore expected medical help-seeking to increase with age, accelerating in women's mid-thirties (Passet-Wittig & Greil, 2021). Regulations in different countries concerning access to treatment and reimbursement of costs were likely to affect the relevance of age for help-seeking. We treated age at interview (W1A) as a categorical measure to allow for non-linear associations between age and help-seeking across treatment stages. We used three categories: ≤ 34 years, 35–39 years, 40+ years. The age category 40+ years is particularly relevant because couples in which the woman is above 40 were not eligible for reimbursement in Germany.

Parity is also important to consider, as infertility experience and treatment use differ between those with and without children (Weller, 2015). Number of biological children at time of interview (W1A) contains three categories: no children, 1 child, 2+ children. We could assess parity only at the time of interview; in most cases, the interview would take place after the period of help-seeking. We also control for experience of infertility. The binary lifetime indicator of infertility refers to whether an individual ever experienced twelve months of trying to get pregnant without success, following the medical definition of infertility (Zegers-Hochschild et al., 2017). It was based on the question: Was there ever a time when you and *a partner* were trying to get pregnant but did not conceive within at least 12 months? To this question, respondents could reply "yes" or "no."

As one aim of this study was to provide a comprehensive picture of all those seeking medical help to have a child among German women and men of reproductive age, we also included an indicator of sexual orientation. We included sexual preference for women only, because male couples cannot use MAR to have a child in Germany. We constructed this indicator by noting the sex of the current and previous partners (W1A). In FReDA, detailed information on previous partners (including their sex) is available only for up to ten previous partners with whom the respondent lived together or had been married. Thus, this variable may not cover the full partnership biography. It is, however, the best available way to identify sexual orientation. Women were categorized as "lesbian/diverse" if they ever reported a partner of the same sex or if they classified at least one of their partners as diverse. There were too few women with diverse partners to treat them as a separate category. The category "heterosexual" was used if a woman never had a same-sex or diverse partner. An additional category had to be added for women who ever had a partner but never lived with a partner or were never married to a partner because we did not know their partner's gender.

3.3. Methods

As noted above, the help-seeking variable consists of four ordered categories. For this type of variable, the ordered logit model would be a conventional choice, but the model violates the parallel lines assumption, which requires the coefficients to be the same for all categories of the dependent variable (Long & Freese, 2014). We explored a common alternative, the multinomial logit model, which estimates separate coefficients for all categories. Multinomial logit, however, completely ignores the ordering of the categories and may estimate more coefficients than necessary. Therefore, we used the partial proportional odds model (Williams, 2006). This model relaxes the parallel lines assumption only where needed, fixing some coefficients to be the same across treatment stages while allowing others to vary, making it a more parsimonious option than multinomial logistic regression (Williams, 2016).

To identify variables for which the parallel lines assumption is violated, we applied the Brant test to the fully specified models using the user-written command *brant* in Stata, which indicates whether or not the parallel lines assumption holds for each variable in a model (Long & Freese, 2014). Williams (2016) suggests that the Brant test should not be the only guide to making choices about how to treat specific variables. Therefore, we compared results from several different models (e.g., allowing no variables, only certain variables, and none of the variables to vary). In all cases, the variables for which the Brant test did not suggest a violation of the parallel lines assumption, the variation across treatment stages was negligible when we allowed for variation. Therefore, we followed the results from the Brant test, and estimated multiple coefficients only when warranted.

The partial proportional odds model was estimated using the user-written gologit2 command (Williams, 2006) using Stata/SE 18. We estimated three separate models for women and men: (a) unadjusted models for all variables; (b) a full model including main explanatory variables and controls; and (c) the full model plus the infertility variable. We introduced infertility experience in a separate model because we assume it is associated with both help-seeking and indicators of social stratification, and we wanted to assess unique and combined associations among variables. Additionally, we wanted to measure the extent to which the associations of social stratification indicators with help-seeking were measuring a higher risk of infertility rather than barriers to treatment. By including a measure of meeting medical criteria for infertility, we estimated the focal association, adjusted for whether or not an individual experienced infertility.

For variables in which the coefficients differ by help-seeking stage, we show three different coefficients, reflecting the following comparisons: (a) any help-seeking (regardless of stage) versus no help-seeking; (b) having sought treatment (medication or advanced) versus not having sought help or just talked to a doctor; and (c) having sought advanced treatment in contrast to all lower stages. For variables that meet the proportional odds assumption, we show only one coefficient across treatment stages in the first column because the coefficient is the same across stages.

4. Results

4.1. Descriptive Analyses

Figure 1 illustrates the weighted prevalence of each highest treatment type among women and men of reproductive age. For this ordinal indicator, respondents were grouped by the highest treatment type mentioned. Help-seeking was higher for women than for men, overall (women: 12.3%, men: 8.0%) and for all levels of treatment. While women were least likely to have consulted a doctor as their "highest treatment stage," for men, the category with the lowest prevalence rate was medication.

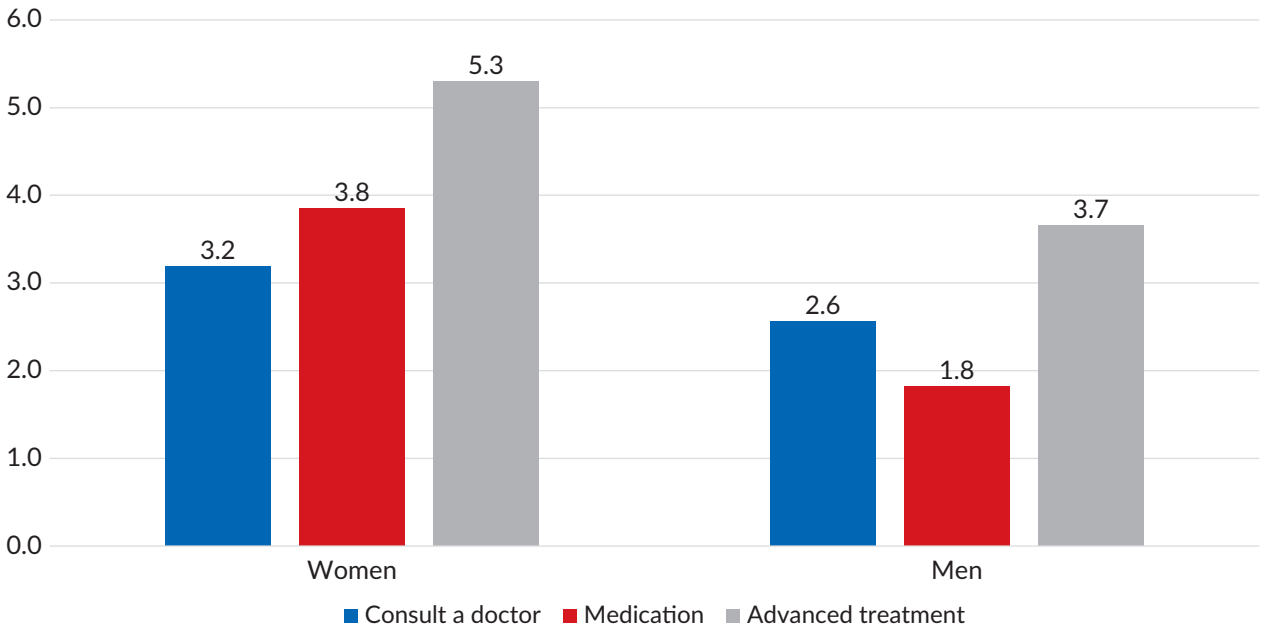

Figure 1. Prevalence rates for highest treatment type by sample and gender (in percentages). Source: FReDA W1: 11,805 women and 9,463 men, weighted using calibrated design weights.

Table 2 provides an overview of the main explanatory variables and control variables and their distribution across highest treatment stages. Overall, patterns were very similar for women and men. Those with higher education were more likely to be represented at all stages of help-seeking. Higher household income was associated with higher shares of help-seekers at all treatment stages. Those ever married were more likely to seek medical help to have a child; however, the share increased across highest treatment stages. Among women and men who never had a partner, help-seeking to have a child was virtually non-existent, with only 1.3% of women and 1.5% of men having ever sought any kind of help to have a child. This is reasonable considering that people usually intend to and try to have children when they are in a relationship. The overall share of respondents who ever experienced infertility was 14.6% for women and 10.5% for men (not shown), with considerable differences among those *seeking help or not* and across highest treatment types. In the advanced treatment group, the share who experienced infertility was over 80% for women and men. That it was not 100% indicates that there is a substantial number of people or couples who use infertility treatments who never met the medical criteria for infertility.

Table 2. Summary statistics by highest treatment stage by gender.

	Women				Men			
	No help-seeking	Talk to doctor	Medication	Advanced treatment	No help-seeking	Talk to doctor	Medication	Advanced treatment
University entrance qualification (vs. lower)	7,214 (70.4%)	276 (69.5%)	294 (62.6%)	466 (67.4%)	5,675 (65.8%)	173 (64.3%)	113 (63.1%)	255 (66.1%)
Migrant (vs. non-migrant)	1,095 (10.7%)	59 (14.9%)	49 (10.4%)	88 (12.7%)	849 (9.8%)	36 (13.4%)	25 (14.0%)	42 (10.9%)
Household income (cat.)								
≤ 2000€	1,711 (16.7%)	28 (7.1%)	49 (10.4%)	41 (5.9%)	1,338 (15.5%)	12 (4.5%)	15 (8.4%)	24 (6.2%)
> 2000–3000€	1,709 (16.7%)	53 (13.4%)	66 (14.0%)	94 (13.6%)	1,453 (16.8%)	32 (11.9%)	24 (13.4%)	33 (8.5%)
> 3000€	5,111 (49.9%)	277 (69.8%)	299 (63.6%)	488 (70.6%)	4,839 (56.1%)	208 (77.3%)	130 (72.6%)	312 (80.8%)
Missing value	1,716 (16.7%)	39 (9.8%)	56 (11.9%)	68 (9.8%)	999 (11.6%)	17 (6.3%)	10 (5.6%)	17 (4.4%)
Marital status								
Never partner	743 (7.3%)	0 (0.0%)	2 (0.4%)	6 (0.9%)	1,077 (12.5%)	1 (0.4%)	1 (0.6%)	2 (0.5%)
Partner, never married	4,906 (47.9%)	89 (22.4%)	100 (21.3%)	90 (13.0%)	4,122 (47.8%)	50 (18.6%)	38 (21.2%)	48 (12.4%)
Partner, ever married	4,598 (44.9%)	308 (77.6%)	368 (78.3%)	595 (86.1%)	3,430 (39.7%)	218 (81.0%)	140 (78.2%)	336 (87.0%)
Age groups								
≤ 34 years	5,733 (55.9%)	110 (27.7%)	192 (40.9%)	144 (20.8%)	4,751 (55.1%)	58 (21.6%)	48 (26.8%)	47 (12.2%)
35–39 years	1,677 (16.4%)	112 (28.2%)	115 (24.5%)	171 (24.7%)	1,436 (16.6%)	81 (30.1%)	56 (31.3%)	93 (24.1%)
40+ years	2,837 (27.7%)	175 (44.1%)	163 (34.7%)	376 (54.4%)	2,442 (28.3%)	130 (48.3%)	75 (41.9%)	246 (63.7%)
Number of biological children								
No children	5,711 (55.7%)	111 (28.0%)	137 (29.1%)	234 (33.9%)	5,382 (62.4%)	69 (25.7%)	69 (38.5%)	113 (29.3%)
1 child	1,657 (16.2%)	124 (31.2%)	146 (31.1%)	213 (30.8%)	1,228 (14.2%)	92 (34.2%)	57 (31.8%)	122 (31.6%)
2+ children	2,879 (28.1%)	162 (40.8%)	187 (39.8%)	244 (35.3%)	2,019 (23.4%)	108 (40.1%)	53 (29.6%)	151 (39.1%)
Sexual orientation								
Heterosexual	8,505 (83.0%)	392 (98.7%)	467 (99.4%)	633 (91.6%)	n.a.	n.a.	n.a.	n.a.
Homosexual/diverse	195 (1.9%)	2 (0.5%)	1 (0.2%)	47 (6.8%)	n.a.	n.a.	n.a.	n.a.
Missing value	1,547 (15.1%)	3 (0.8%)	2 (0.4%)	11 (1.6%)	n.a.	n.a.	n.a.	n.a.
Ever infertile (vs. never infertile)	604 (5.9%)	261 (65.7%)	279 (59.4%)	582 (84.2%)	383 (4.4%)	173 (64.3%)	119 (66.5%)	322 (83.4%)

Note: n.a. = not available. Source: FReDA W1: 11,805 women, 9,463 men.

4.2. Multivariable Analyses

Table 3 displays results from the partial proportional odds models used to investigate social disparities across stages of medical help-seeking for women and men. The partial proportional odds model requires at least some variation at each treatment stage, but among persons who never had a partner, help-seeking to have a child was very uncommon, making it an almost perfect predictor of help-seeking (see Table 2). We therefore used a sample of women and men who ever had a partner, reducing the analytical samples from 11,805 to 11,054 women and from 9,463 to 8,382 men. The reduction was greater for men, reflecting a higher share of men who never had a partner. We did not include sexual orientation here because there were not enough cases at two of the four treatment stages. For unadjusted coefficients see the Supplementary File, Table S1.

Contrary to expectations, women and men with university entrance qualifications had lower odds of seeking medical help than those with lower education in the unadjusted models (see Supplementary File, Table S1), while there was no association in the full model or the full model with infertility (Table 3). Further analyses (not shown) indicated that introducing marital status, age, and number of children into the model independently and together were responsible for the change from significance to non-significance for education. Also, contrary to expectations, migrant status was not associated with help-seeking in any of the models for women or men. The results confirmed our expectation of the relevance of household income based on the stratified reproduction perspective: the odds of help-seeking increased as income increased. However, the degree of association was the same for all three comparisons. Marital status had a substantial association with medical help-seeking. Consistent with what the life course perspective suggests, women and men who had ever been married had much higher odds of ever seeking help compared to those who had never been married. For women, but not for men, the association varied by treatment stage, with the largest odds for the advanced treatment group in the full model. Controlling for infertility experiences reduced the variation in the associations across treatment stages. For understanding the latter finding, it is important to know that ever-married women have a higher risk of experiencing medical infertility (not shown) and that infertility is a particularly strong predictor of seeking advanced treatments.

Several of the control variables were associated with the stage of help-seeking. There was variation in the association between age and number of biological children, respectively, with medical help-seeking across treatment stages. Among both women and men in the middle age group and among men 40 years and older, there was a noticeable increase in the odds of help-seeking when we compared advanced treatments to all lower stages, including no help-seeking. When we controlled for infertility status, only the association for advanced treatment compared to any lower stage remained statistically significant.

Parity was associated with help-seeking differently by stage. Women and men who had one child at the time of interview had higher odds of any help-seeking (first comparison), but not for other highest treatment types. In contrast, the association was negative at all treatment stages for women and men with two or more children, indicating that those with two or more children were less likely to have sought medical help. The sign of the coefficient was different in the multi-variable model compared to the unadjusted model. The unadjusted coefficients (see Supplementary File, Table S1) were positive for women with 2+ children at all treatment stages. Further analyses for women (not shown) indicate that this change of sign occurred when the indicator for ever married, which was associated with a higher likelihood of help-seeking, was introduced. Further descriptive analyses showed that the overwhelming majority of those with larger

Table 3. Results from partial proportional odds models of medical help-seeking for women and men (odds ratios).

	Women						Men					
	Full model			Full model + infertility			Full model			Full model + infertility		
	0 vs. 1, 2, 3	0, 1 vs. 2, 3	0, 1, 2 vs. 3	0 vs. 1,2,3	0, 1 vs. 2, 3	0, 1, 2 vs. 3	0 vs. 1, 2, 3	0, 1 vs. 2, 3	0, 1, 2 vs. 3	0 vs. 1,2,3	0, 1 vs. 2, 3	0, 1, 2 vs. 3
University entrance qualification (ref. lower)	0.926			1.012			1.041			1.085		
Migrant (ref. non-migrant)	0.911			1.064			1.161			1.205		
Household net income (ref. > 3000€)												
≤ 2000€	0.592**			0.637**			0.641**			0.586**		
> 2000–3000€	0.759**			0.777*			0.629**			0.564**		
missing value	0.638**			0.740**			0.549**			0.503**		
Ever married (ref. never married)	3.912**	4.288**	5.362**	2.782**			3.945**			2.178**		
Age (ref. < 35 years)												
35–39 years	1.850**	1.703**	2.521**	1.205	1.079	1.591**	2.484**	2.634**	3.182**	1.527**	1.536**	1.864**
40+ years	1.813**	1.777**	3.017**	1.067	1.051	1.876**	2.738**	3.194**	4.783**	1.331*	1.506**	2.366**
Number of biological children (ref. no children)												
1 child	1.247**	1.154	1.001	1.227*	1.129	0.993	1.356**	1.162	1.204	1.854**	1.416*	1.436*
2+ children	0.644**	0.597**	0.466**	0.823*	0.755**	0.606**	0.685**	0.593**	0.656**	1.05	0.848	0.976
Ever infertile (ref. never infertile)				30.374**	23.697**	32.020**				39.216**		
Log-likelihood_0		−6141.5			−6141.5			−3579.8			−3579.8	
Log-likelihood		−5665.5			−4324.6			−3236.8			−2385.2	
N		11,054			11,054			8,382			8,382	

Notes: Only one set of coefficients is presented for explanatory variables that meet the proportional odds assumption, because the coefficient is the same for each level of help-seeking; categories of dependent variable: 0 = *no help-seeking*, 1 = *talk to doctor*, 2 = *medication*, 3 = *advanced treatment*; sample sizes deviate from Table 2 because for this analysis we include only women and men who ever had a partner; * $p < 0.05$, ** $p < .01$. Source: FReDA W1.

families had ever been married (≈90%). In conclusion, although the coefficients for those having two or more children were negative, those with larger families were still more likely to have sought advanced treatments.

Finally, lifetime experience of infertility had a particularly strong association with medical help-seeking among both women and men. There was variation across treatment stages for women only. The likelihood of seeking medication or advanced treatments was slightly lower (second comparison) than they were for seeking any help and seeking advanced treatments. These associations, however, should not be overinterpreted as the odds ratios were all very large as a result of small sample sizes.

5. Discussion

This study assessed social disparities in the seeking of medical help to have a child. By differentiating across stages of medical help-seeking (no help-seeking, consulted a doctor, received medication, and advanced treatments), this study contributes to understanding where in the process of help-seeking these disparities occur and offers some guidance as to the mechanisms involved. Employing a stratified reproduction perspective points to the embeddedness of use of medical help to have a child in broader social structural and specific institutional settings. Based on German survey data for 18-to-50-year-old women and men, we calculated prevalence rates of ever help-seeking for each stage and investigated social disparities across help-seeking stages.

Medical help-seeking to have a child is not uncommon among women and men of reproductive age. The overall lifetime prevalence of help-seeking amounted to 12.3% for women; for men, it was considerably lower (8.0%). These figures were slightly lower than those reported in a recent French study, which also found higher help-seeking prevalence among couples reported by women compared to those reported by men (15% vs. 11%; see Belgherbi & de La Rochebrochard, 2018). Comparing the different treatment stages revealed that most of the differences came from women's more frequent experience with medication. Examining only talking to a doctor and advanced treatments would make women's and men's prevalence rates much more similar. These results then suggest that for talking to a doctor and advanced treatment, male partners might experience help-seeking by partners as happening also to them, even if they were asked about their personal treatment use rather than their experience in a couple. If this is the case, then for some reason, men were not applying the same logic when it came to their partner's use of medication. One explanation could be gender differences in the ability to recall the use of medication. Another explanation could be that women do not involve their partners as much in medication treatments and that, therefore, male partners might not even know about them.

Next, we investigated the role of social disparities in the seeking of medical help to have a child and the extent to which any social disparities varied across highest treatment stages. We were particularly interested in whether disparities were elevated for advanced, higher cost treatments, even when the differing risk of infertility experience of these groups was considered. We found evidence for social disparities in the seeking of medical help to have a child for two of four indicators. First, higher household income was associated with higher odds of seeking medical help in the full models. We assumed that higher household income would particularly enable the use of advanced treatments, which were the most expensive and which are not always reimbursed. The findings here raise the question: why were people with higher household income more likely to talk to a doctor and to have simple treatments than people with lower income, even though these actions

were typically not associated with any costs for the patients in Germany? One possible reason is that people with lower income might not bother with the initial steps of treatment because they anticipate that they will not be able to afford the full course of care. While direct evidence on this specific mechanism is limited, research on financial barriers to infertility care (e.g., Domar et al., 2012) supports the idea that anticipated costs can deter engagement with treatment. Further research is needed to better understand the observed pattern by household income.

Second, consistent with other research, we found that having ever been married was associated with higher probability of seeking treatment for both women and men (e.g., Köppen et al., 2021). We found an incremental increase in the odds across highest treatment stages for married women when we did not control for the higher prevalence of lifetime infertility in this group. If marital status were mainly an enabling condition, then there should be variation in the association across treatment stages, with elevated risk for the advanced treatment stage, even when infertility was controlled for. We did not see this pattern, even though only married couples with statutory health insurance were eligible for reimbursement of costs for advanced treatments in Germany. The findings in this study also supported considering marital status to be a cultural or life course cue. In Germany, childbearing remains more prevalent among married couples, despite the increasing incidence of non-marital births. The finding that married women were more likely to try to have a child and seek medical assistance is consistent with the broader, though gradually weakening, normative association between marriage and childbearing. It could also be that the topic of infertility and medical help-seeking to have a child is more likely to come up in doctor visits if a couple is married, which could contribute to selection into doctor consultation and medication as the highest treatment stage. Alternatively, it is possible that people anticipate that they can get reimbursed only if they were married and therefore only bother to seek medical help if they were married.

Furthermore, this study showed that focusing only on individuals with medical infertility would overlook an important part of the picture concerning who seeks medical help in a population. Notably, 15.8% of women and 16.1% of men in the advanced treatment group had never experienced infertility. Those seeking medical help without ever having experienced infertility could be people who turned to medical help before twelve months of trying, people with known conditions (e.g., endometriosis, polycystic ovary syndrome, or history of cancer) who did not try to have children, or other people who do not meet the criteria for the medical definition of infertility, such as single women and lesbian couples. While we could not identify most of these groups in our data, we can say something about patterns of help-seeking among lesbian women. Lesbian women were much less likely to seek any help, but if they sought help, they were most likely to be in the advanced treatment group. Recall that lesbian women are not eligible for reimbursement of treatment costs in Germany.

A limitation of this study is that it used a lifetime indicator of medical help-seeking to have a child. We therefore did not have specific information about when the help-seeking occurred. Some explanatory variables, such as household income and level of education, indicated status at the time of interview, which might be years after experiencing infertility and/or help-seeking. Other variables reflected whether people were ever married or ever had infertility, thus also providing information on lifetime experiences without information about timing. We assume that potential differential timing of social status, infertility, and help-seeking would result in underestimating the strength of associations of social status measures with medical help-seeking. For example, for household income and marital status, we would expect a stronger

association with help-seeking and potentially variation across highest treatment stages if the variables were measured at the time when the help-seeking occurred. Longitudinal research with explanatory variables measured before help-seeking is needed to test if this assumption is correct. Additionally, information about type of health insurance would have helped understand whether out-of-pocket expenses would be necessary or not.

In this study, we used Germany as an example of a country with high demand for treatment, relatively restrictive access regulations for ART, and substantial out-of-pocket costs for many users. We argue that findings from studies like this must be interpreted in light of the national context, which limits the extent to which they can be generalized to other settings. In addition, differences in analytic choices—such as sample selection, definitions of help-seeking, and the variables included—further complicate cross-national comparisons (Passet-Wittig & Greil, 2021). To conclude, our results support the conclusion that reproduction via medical assistance is socially stratified in Germany, particularly in relation to income, marital status, and sexual orientation. If economic resources were the predominant reason for help-seeking disparities, we would expect disparities to be highest for the advanced treatment stage. That we did not find this suggests that there are other dimensions to these variables, including cultural factors and knowledge, which contribute to the observed disparities.

Acknowledgments

Earlier versions of this manuscript were presented at the European Population Conference (EPC) 2024 and at the Annual Meeting of the European Society on Human Reproduction and Endocrinology (ESHRE) in 2023. We are grateful to the conference participants for their valuable comments and to Carmen Friedrich for her insightful feedback on an earlier draft.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

This article uses scientific use files from the FReDA survey, v2.0.0 release (Bujard et al., 2023; Schneider et al., 2021). Data are available here: https://search.gesis.org/research_data/ZA7777

LLMs Disclosure

The authors used ChatGPT during the writing process to improve the readability of the article. They thoroughly reviewed any content produced by AI and take full responsibility for the content of the article.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2025 • Volume 13 • Article 10597
https://doi.org/10.17645/si.10597

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Open Access Journal

How Religious Affiliation and Religiosity Shape Attitudes Toward Medically Assisted Reproduction in Switzerland

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Submitted: 24 April 2025 **Accepted:** 27 August 2025 **Published:** 22 October 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Although Western societies are becoming increasingly secular, religion continues to play a significant role in shaping attitudes toward family-related issues, including medically assisted reproduction (MAR). Existing research on this topic is limited, often focuses on specific procedures or subgroups, and frequently overlooks the multifaceted nature of religion. Our study addresses these research gaps by examining how various dimensions of religiosity—affiliation, religious socialization, self-assessed religiosity, and religious practice—relate to attitudes toward a broad spectrum of MAR procedures in the general Swiss population. Using data from the representative CHARLS 2023 survey, we assessed public acceptance of nine MAR techniques through both a composite index and evaluations of individual procedures. Our findings show that higher religiosity across all dimensions is consistently associated with lower moral acceptance of MAR. While religious affiliation mattered, especially among Muslims and Evangelical Christians, its effect was significantly reduced when personal religiosity and practice were taken into account. Personal religiosity and frequent prayer emerged as the strongest predictors of lower acceptance. Religious socialization also had a modest negative impact, particularly among those raised in highly religious households. Acceptance was generally lower for procedures involving third-party contributions (e.g., donor gametes, surrogacy), though differences between procedures were not statistically significant. Overall, the results underscore the enduring influence of religion on attitudes toward reproductive technologies—even in a secularizing context.

Keywords

attitudes toward medically assisted reproduction; religion; religiosity; Switzerland

1. Introduction

Despite rapid secularization and the declining importance of religion in Western societies, religion continues to be an important factor shaping the attitudes, values, and behaviors of people who identify with a particular faith, influencing their worldview, moral compass, and social interactions (e.g., Halman & Sieben, 2023; Inglehart-Welzel Cultural Map, 2023; Storm, 2016). Christianity, Judaism, and Islam place great emphasis on the family, and attitudes toward marriage/relationships, sexuality, and family formation are therefore strongly influenced by these beliefs (e.g., Blyth & Landau, 2009; Grasmick et al., 1990; Kogan & Weißmann, 2019; Liefbroer & Rijken, 2019; Olson et al., 2006; Pickel, 2001). These religions also reflect distinct underlying ethical frameworks, so religious affiliation and religiosity can be expected to have an impact on attitudes toward medically assisted reproduction (MAR)—a topic with implications for the traditional family sphere. However, there are few studies on (public) attitudes toward MAR, and not all take religious factors into account (Fauser et al., 2019; Meissner et al., 2016; Yamamoto et al., 2018). Moreover, research that does examine religion often fails to consider its different dimensions (e.g., Aurrekoetxea-Casaus et al., 2022; Milewski & Haug, 2020; Shreffler et al., 2010; Szalma & Bitó, 2021). In the sociology of religion, the concept is treated as multifaceted, often differentiating between affiliation, personal belief, and religious practice or ritual. In our article, we will analyze how these different dimensions shape attitudes toward MAR in Switzerland—a country that, despite its long Christian tradition, has undergone a profound shift toward secularization in the last two decades. While the majority of the population is still religiously affiliated, almost a third no longer identify with any religion, and religious debates and figures are not prominent in the public arena. Given this juxtaposition between believers and non-believers, we expect attitudes to MAR to vary significantly between those who (still) feel they belong to a religious community and/or consider themselves religious and those who do not. We aim at closing the research gap regarding the impact of religion on attitudes toward MAR by analyzing the role of various dimensions of religion (religious socialization, religious affiliation, self-assessed religiosity, and religious practice) on the acceptance of MAR.

Another motivation for our study is the fact that few studies have comprehensively examined public attitudes to MAR (with some recent exceptions, e.g., Adamczyk et al., 2024; Szalma & Djundeva, 2019). Extensive research has been conducted on the experiences and attitudes of individuals directly involved in fertility treatments, particularly those who have either donated gametes or utilized donated gametes/gamete donations or those involved in surrogacy arrangements (e.g., Arvidsson et al., 2019; Freeman et al., 2014; Karandikar et al., 2014; Lafuente-Funes et al., 2022; MacCallum et al., 2003; Pande, 2009; Yu et al., 2021). Studies on the acceptance of (specific) MAR procedures often have a narrow focus on demographic subgroups, such as women, men, students, or individuals experiencing infertility (e.g., Fortin & Abele, 2016; Haug et al., 2017; Meissner et al., 2016; Milewski & Haug, 2020; Pennings & Provoost, 2019; Provoost et al., 2018; Wennberg et al., 2016). In addition, some studies rely on convenience samples (see, for example, the meta-study on surrogacy by Rodríguez-Jaume et al., 2021). However, existing research is not only limited by its narrow focus on specific subgroups but also in the breadth of procedures considered. Typically, research on attitudes toward MAR concentrates on specific procedures. Often, insemination and in vitro fertilization (IVF) are taken as representative of MAR procedures in general (Adamczyk et al., 2024; Präg & Mills, 2017; Szalma & Djundeva, 2019). Other studies focus exclusively on attitudes toward egg freezing, surrogacy, or preimplantation genetic testing (PGT; e.g., Aurrekoetxea-Casaus et al., 2022; Meissner et al., 2016; Yıldız et al., 2023).

Our study is motivated by the lack of research on public attitudes toward MAR, the often narrow focus on specific subgroups or procedures, and the lack of consideration of religion in its multidimensional expression. Given the current state of research on the covariation of religion and attitudes to MAR, we pose the following research question: How do the different dimensions of religion covary with attitudes in the Swiss population toward MAR in general and individual MAR treatments? We study this question based on CHARLS (2023, wave 1), a representative survey of the Swiss population. In the following we present the legal framework for MAR and the religious landscape in Switzerland, the state of research on religion and MAR, the data base of our empirical study and the empirical results of our analysis. Overall, the results show that the different dimensions of religion considered (affiliation, socialization, religiosity and practice) strongly influence attitudes toward MAR. Even in heavily secularized contemporary societies, religion is still important in shaping attitudes toward family-related issues.

2. Background and Swiss Context

In this section, we provide background information on Switzerland. We begin by briefly outlining the legal context of MAR, then present an overview of the religious landscape, focusing on the changing distribution and significance of religious affiliation within the population.

2.1. MAR in Switzerland

Since the first successful IVF in 1978, MAR has evolved into a major area of healthcare for treating infertility and/or childlessness. Along with developments in the medical field, MAR has also become an important economic sector (Deonandan, 2015; Spar, 2005). In Switzerland, the first live birth following IVF was in 1985. The number of IVF treatments then increased markedly, up to roughly 6,500 in 2010. In the last decade the numbers have remained relatively stable. The latest report from the European IVF Monitoring Consortium for the European Society of Human Reproduction and Embryology (EIM ESHRE) indicates that 6,041 IVF treatments were performed in Switzerland in 2019 (EIM ESHRE et al., 2023, p. 2323). For 2022, the Swiss Federal Statistical Office reported that 6,609 couples had received IVF treatment.

In Switzerland, MAR is regulated under the Federal Act on Medically Assisted Reproduction (FMedG, 2001), which outlines the legal framework and ethical boundaries for reproductive technologies. Procedures such as IVF and intracytoplasmic sperm injection are permitted but restricted to couples who are married or in a stable partnership and face medical infertility or a significant risk of transmitting a serious genetic disorder. This has also applied to female same-sex couples since "marriage for all" came into force in July 2022. PGT has been legal since 2017, but only in cases where there is a high likelihood of genetic disease. The number of embryos that can be created and stored is legally limited to a maximum of twelve, and embryos may be frozen for up to five years. Embryo donation and surrogacy, both altruistic and commercial, remain strictly prohibited under Swiss law. Sperm donation is permitted but limited to married couples, including married female same-sex couples, since 2022. While egg donation is currently prohibited, the law is set to be revised, with plans to legalize egg donation in the near future and to allow unmarried couples and single people access to MAR. These legal provisions reflect Switzerland's cautious and ethically grounded approach to MAR, balancing medical innovation with concerns for child welfare and respect for human dignity (cf. FMedG, 2001; The Federal Assembly of the Swiss Confederation, 1998).

2.2. Religion in Switzerland

Switzerland is a nation profoundly shaped by Christianity, whose influence has extended over 1,500 years of cultural, political, and social development. Until the 19th century, Christianity in the forms of Catholicism and Reformed Protestantism dominated the country's religious landscape, with Judaism being the only other long-standing religious tradition—although historically it occupied a marginal position. Recent demographic shifts, however, have significantly altered the religious landscape. The traditional dominance of the Roman Catholic and Reformed Protestant churches has gradually diminished, accompanied by a rise in the number of citizens with no religious affiliation. In addition, migration to Switzerland has led to greater religious diversification (Becci & Dandarova-Robert, 2022; Stolz et al., 2014).

Figure 1 shows the religious affiliation of the population in Switzerland between 1970 and 2023 (BfS, 2025). Over the past five decades, the religious composition has changed, with the decline of the major Christian denominations and a continuous increase in the number of religiously unaffiliated people (cf. also Becci & Dandarova-Robert, 2022; Stolz et al., 2022; Stolz & Senn, 2022). The Roman Catholic population, which accounted for almost 47% of the total in 1970, has steadily declined to less than 31% in 2023. A similar trend is observed among Reformed Protestants, whose share dropped from 49% in 1970 to below 20% in 2023. This shift, particularly pronounced after the year 2000, was accompanied by a rise in the proportion of religiously unaffiliated people, which tripled from 11.4% in 2000 to almost 36% in 2023. Meanwhile, smaller religious groups have seen gradual growth. Other Christian communities have expanded from 2% in 1970 to 6% in 2023, indicating diversification within Christianity itself. The Muslim community has grown substantially, from 0.2% in 1970 to nearly 6% in 2023, reflecting migration patterns and demographic changes. In contrast, the Jewish population has seen a slight decline from 0.4% to 0.2% over the same period. These trends underscore a broader shift away from traditional religious affiliations, reflecting societal changes such as secularization, migration, and evolving new (religious/spiritual) identities (e.g., Wäckerlig et al., 2022). Despite the lack of comprehensive official data, empirical evidence points to a non-negligible

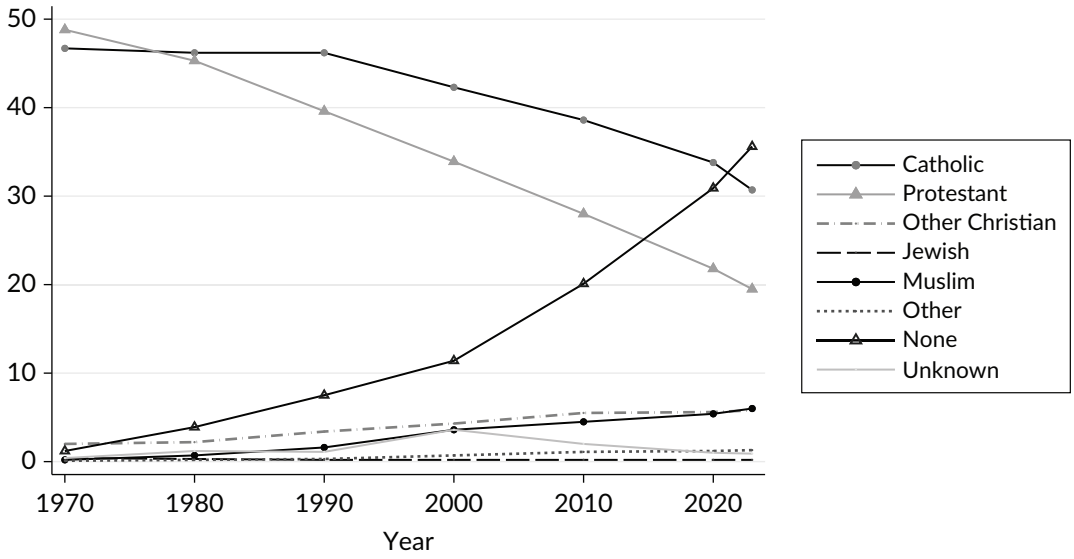

Figure 1. Religious affiliation in Switzerland from 1970 to 2023, in percent, permanent resident population aged 15 and over. Source: Own compilation based on BfS (2025).

presence of these evolving new identities ("holistic spirituals") within the population (Becci & Dandarova-Robert, 2022; Stolz & Senn, 2022, pp. 19–21).

3. How Does Religion Shape Normative Attitudes?

The sociology of religion has focused on the function of religion in society, examining how religious beliefs, practices and institutions shape individual and collective attitudes and behaviors. It studies religion not only as a system of belief or practice, but as a powerful social institution that influences and is influenced by other areas of social life. Classical theorists such as Émile Durkheim, Max Weber, and Karl Marx laid the foundation for the sociology of religion and offered different perspectives on its function: as a source of social integration (Durkheim), a factor in economic and cultural change (Weber), or a mechanism of social control and inequality (Marx; see Durkheim, 1994, pp. 549–570; Knoblauch, 1999, pp. 20–38; Weber, 1988). In the following, we will mainly draw on social constructivist approaches to religion, which focus on how religious meanings, practices, and worldviews are created, maintained, and changed through social interaction and communication.

According to this perspective, the different religious doctrines serve as socially constructed legitimizations, which convey meaning to (religious) individuals, guide their behavior, and legitimate the social order (Berger, 1973, 1990; Knoblauch, 1999). According to Peter Berger's theory of the social construction of reality, religious institutions provide a structured worldview that helps individuals interpret their experiences and find meaning in their lives. These doctrines are not just spiritual guidelines but also serve as legitimizing narratives, reinforcing moral norms and social cohesion. For religion to have a constant effect, there must be ongoing contact (cf. Berger & Luckmann, 1992, pp. 165–166). This means that the effect of religious doctrines should be more pronounced for those who are integrated into a meaningful context (e.g., through regular attendance of religious services). Furthermore, Berger and Luckmann (1966) argue that religious belief systems, as powerful social constructs, not only shape personal identities but also influence public morality—especially through public discourse, at least when religious authorities play a formative role in this. Similarly, Knoblauch (1999) emphasizes how religious teachings are embedded in social structures and continue to influence personal identities and collective norms. Even in increasingly secular societies, religious doctrines remain influential, providing moral justification and a sense of purpose for believers. For religious individuals, faith not only prescribes their behavior—it offers a legitimized, socially sanctioned framework, explaining the world and their place within it.

3.1. Previous Empirical Evidence

Previous studies have shown that perceptions of MAR are shaped by factors such as gender, age, educational level, and religious beliefs. For example, Aurrekoetxea-Casaus et al. (2022) highlight the role of religiosity and conservatism in shaping attitudes in Spain, noting that women generally express more supportive views toward MAR than men. This gender difference is corroborated by cross-national studies: Fauser et al. (2019), in a study covering six European countries, Szalma and Djundeva (2019), and Adamczyk et al. (2024), using data from the European Value Survey (covering 42 and 35 countries, respectively), all found that women held more positive attitudes toward assisted reproduction than men. In many studies, age has been found to negatively correlate with MAR acceptance, with older individuals typically showing lower levels of support (e.g., Adamczyk et al., 2024; Aurrekoetxea-Casaus et al., 2022; Szalma & Djundeva, 2019). In contrast, knowledge and education emerge as strong positive predictors of favorable attitudes toward

MAR. Research shows that greater awareness and understanding of reproductive technologies lead to higher levels of support (Fortin & Abele, 2016). Similarly, individuals with higher levels of education tend to exhibit more tolerant views toward MAR (e.g., Adamczyk et al., 2024; Szalma & Djundeva, 2019).

The following section highlights empirical research examining the relationship between religion and attitudes toward MAR, particularly in the European context. Recent studies suggest a complex interplay between religious factors and public acceptance of MAR, shaped by both individual and societal dimensions. At the individual level, religious affiliation often correlates with acceptance levels: Szalma and Djundeva (2019) found that Orthodox and Protestant individuals were generally more supportive of MAR (considering only insemination and IVF) than Catholics, while Muslims and members of other religious groups showed lower acceptance. Interestingly, non-religious individuals showed similar attitudes to Catholics. Additionally, frequent attendance at religious services was associated with lower acceptance of MAR. At country level, however, neither the dominant religion nor general religiosity had a significant impact.

In contrast, Milewski and Haug (2020) found that in Germany, religious women—especially Muslims—expressed more favorable attitudes toward MAR than non-religious women. However, this support did not necessarily translate into a willingness to use MAR, which the authors attributed to differences in knowledge about the procedures. Expanding on the contextual dimension, Adamczyk et al. (2024) showed that both personal religiosity and the broader national religious climate influence MAR attitudes across Europe. Their findings revealed that individuals with strong religious beliefs, particularly conservative Protestants, were more likely to disapprove of MAR, and that countries with higher proportions of religiously engaged citizens generally exhibited lower levels of acceptance. Taken together, existing research underscores the continuing influence of religion on attitudes toward MAR in contemporary societies. However, the studies presented only focused on one or a few examples of MAR and did not systematically account for the various dimensions of religion.

3.2. Religion as a Multidimensional Construct

Even when previous studies have considered the effect of religion (e.g., Aurrekoetxea-Casaus et al., 2022; Milewski & Haug, 2020), its different dimensions have rarely been taken into account. The sociology of religion does not treat it as a uniform phenomenon, but as a complex system of different aspects or dimensions. Charles Y. Glock and Rodney Stark were prominent early proponents of this thesis. Glock proposed a five-dimensional scheme of the nature of religious commitment (Glock, 1962). The ideological dimension refers to the beliefs held by a religious person or community. The ritualistic dimension covers the religious practices of adherents (e.g., participation in worship). The experiential dimension includes personal religious experiences or feelings. The intellectual dimension refers to the knowledge and understanding of religious teachings. Finally, the consequential dimension concerns the effects of religiosity on everyday behavior (e.g., donations, abstaining from contraception). Glock and Stark (1965) explicitly noted that the dimensions could overlap only partially or not at all, so someone could be considered religious in one area but not in others. Other authors extended or adjusted Glock's original dimensions (e.g., De Jong et al., 1976; Vaillancourt, 2008). Most of the research literature distinguishes (at least) three dimensions: (a) belonging to a religious community, (b) religious conviction, i.e., the depth of one's faith and adherence to its tenets, and (c) participation in traditional religious activities and rituals that reflect a sense of devotion and commitment. Empirical research on religion has shown that these dimensions tap into distinct aspects of religiousness

(e.g., Philipov & Berghammer, 2007). Furthermore, these different dimensions do not show uniform covariations with social attitudes and behavior. Therefore, it is important to include the different aspects of religiousness in a study on the covariation between religion and attitudes toward MAR (cf., e.g., Halman & Sieben, 2023). For example, Philipov and Berghammer (2007) showed that for fertility intentions and the actual number of children, participation in religious services is more salient than affiliation and self-assessed religiosity.

3.3. Hypotheses

As described above, our general prediction based on previous research is that religious affiliation and religiosity (for the religions considered) tend to coincide with a skeptical and negative attitude toward MAR. However, this might be structured by the different teachings of the world religions: According to Berger and Luckmann, religious belief systems shape their adherents' attitudes. The Abrahamic faiths share a fundamental commonality in their views on family formation and reproduction. Christianity, Judaism, and Islam all promote marriage as a sacred institution for procreation and family building (cf. Richards, 2009, p. 40; Serour, 2008). To varying degrees, these religions advocate natural conception within marriage as the divinely ordained method of bringing children into the world, emphasizing both biological and spiritual dimensions of human reproduction. While these faiths share common ground, each maintains its unique theological, philosophical, and legal perspectives and interpretations regarding specific aspects of reproduction and family building. Their shared emphasis on marriage as the proper context for procreation reflects a common understanding of family formation as an institution central to human society and divine purpose.

In Islam (as in Judaism), treatment of infertility within marriage is encouraged, as it aligns with the value placed on procreation (Al-Bar & Chamsi-Pasha, 2015; Schenker, 2005; Serour, 2008). A liberal view is generally taken on the use of MAR. For Sunni Muslims, who constitute the majority within the faith (internationally and in Switzerland), MAR is permitted as long as it is conducted within the framework of marriage, and couples use their own biological material. The involvement of third parties—such as sperm or egg donors or surrogates—is strictly prohibited (cf. Al-Bar & Chamsi-Pasha, 2015; Dutney, 2007, p. 175; Inhorn, 2006; Kooli, 2020). Shia religious authorities are more open to the usage of MAR: The donation of gametes and embryos is permitted, enabling sperm donation, egg donation, and surrogacy (Al-Bar & Chamsi-Pasha, 2015, p. 178; Dutney, 2007, p. 175). This relative openness within the (Shia) Muslim community can also be found in corresponding statements by recognized scholars (e.g., Inhorn, 2006). In contrast, the Roman Catholic Church holds a restrictive stance, viewing many reproductive practices as threats to the sanctity of the marital bond. From this theological viewpoint, MAR is seen as a potential challenge to traditional family values. The Church teaches that human procreation must be inherently tied to the sexual union between married spouses, and that an embryo holds the moral status of a human being from the moment of conception (Richards, 2009; Schenker, 2005). Accordingly, the use of most assisted reproductive technologies is rejected (Richards, 2009). For Protestants, there is no single authority and there are no clear guidelines for the use of MAR (Sallam & Sallam, 2016, p. 37). Like other religious groups, however, Protestants emphasize the importance of procreation in marriage and firmly reject the selective reduction of embryos (Best et al., 2019). Evangelical Christians (e.g., members of the Salvation Army)—organized in free churches in Switzerland—set themselves apart from other Protestants. They see it as important to base their lives on the Bible and regard life and reproduction as gifts from God. They share the

Catholics' conviction that life begins at conception and are therefore concerned about IVF, which often creates multiple embryos, from which some are selected and others frozen or discarded. Evangelical Christians are more likely to reject reproductive technologies in general because they are seen as interfering with God's sovereign control—including control over the reproductive process.

In line with the social constructivist approach, the doctrines of the various religious authorities can be expected to have an impact on the attitudes of adherents. While religious affiliation should be an indicator of an individual's religious belief, identification with religious doctrine can vary to some degree. Furthermore, affiliation is only one dimension of the multilayered construct of religion. Other dimensions may be equally meaningful for normative attitudes. Religious practice, for example, visiting the church or praying, should be more meaningful as it involves time and effort. Identifying as being religious refers to the individual dimension of religion. Being socialized in a (very) religious family might exert an influence even if an individual no longer considers themselves religious. Our first hypothesis refers to all the dimensions of religion and states that the more religious a person is (in relation to the religions under consideration, i.e., the different manifestations of Christianity and Islam), the less morally acceptable they will find MAR procedures. This assumption is in line with the finding that religious people tend to hold more traditional and conservative attitudes (e.g., Clements, 2014; Norris & Inglehart, 2012). Thus:

> H1: The more religious a person considers themselves, the less morally acceptable they will find MAR procedures.

In terms of religious affiliation, based on the doctrines set out above, we expect Catholics and Evangelicals to be the most opposed to MAR technologies, followed by Muslims. We expect Protestants to be the most accepting among people who belong to a religious community, while we expect religiously unaffiliated individuals to have the most approving attitudes toward MAR. Thus:

> H2a (religious affiliation): Among the religious, Muslims are more likely than Catholics or Evangelicals to see MAR technologies as morally acceptable, while Protestants are most likely to accept them.

> H2b: Religiously unaffiliated individuals are likely to be more accepting of MAR procedures than religious people.

However, it should be noted that lay people's interpretation of religious restrictions on MAR may differ from official religious doctrines (cf. Blyth & Landau, 2009). This may apply more to Muslims, since—unlike the Pope in the Roman Catholic Church—there is no single authority in Islam that provides clear guidelines.

We differentiate the following hypotheses based on the different dimensions of religiosity. Research studies show that the parental home plays a decisive role in the transmission of (non-)religion. Even if the religion practiced by the parents is not the only factor, it is an essential prerequisite for the transmission of religiosity across generations (Myers, 1996). The same applies to non-religiosity (Tanner, 2022). Thus:

> H3 (religious socialization): The more a person was socialized in a religious family, i.e., the greater the role religion played in their childhood, the less likely they are to accept MAR procedures.

H4 (subjective individual religiosity): The more religious a person considers themselves, the less likely they are to accept MAR procedures.

H5 (religious practice): The more committed a person is to their personal religious practice, i.e., the more often they pray, the less likely they are to approve of MAR procedures.

Regarding the various MAR procedures, we assume that these patterns are more pronounced in procedures involving third parties (e.g., sperm donation or surrogacy), since this is a belief shared by all religions and denominations covered in this study. Thus:

H6 (involvement of third parties): The more MAR procedures require contributions from third parties (e.g., sperm, the body of a surrogate), the less morally acceptable people will find it.

4. Data and Methods

In the following analyses we make use of the first wave of the Swiss (CH) Assisted Reproduction Longitudinal Study (CHARLS). CHARLS is the first Swiss panel study collecting data on attitudes, experiences, and beliefs related to assisted reproduction and family (Büchler et al., 2023). The first wave was collected from March to August 2023. The study employed a disproportionately stratified sampling approach, drawing a sample of 20,000 individuals from the Swiss population register. The population of interest comprised all individuals aged 18 and above with permanent residence in Switzerland. This includes all inhabitants registered in Switzerland, except for foreigners with a residence permit of less than 12 months. The sample was stratified according to the three language regions and, within these strata, further stratified by gender. Individuals were selected at random within each stratum. The language regions included the three main languages of Switzerland: German (including Romansh), French, and Italian. To allow representative statements for each language region, the Italian-speaking population of the canton of Ticino was overrepresented with 10% (vs. 4% in the total population). The sample was drawn with an equal distribution of males and females within each stratum. However, certain patterns of non-response were apparent. For example, the participation rate of Swiss citizens was significantly higher than that of foreign nationals, and participation rates were higher in urban than rural areas. Moreover, there appears to be an education bias, with more highly educated individuals being slightly overrepresented in the resulting sample. The target population was contacted by letter and invited to complete the survey either online or on paper. The survey was conducted in the three main languages of Switzerland (people who speak the fourth official language, Romansh, all speak German). English was also added. People who had moved to Switzerland were contacted in the language they had indicated as their preferred language of communication when registering in their municipality of residence. The response rate was 26%, yielding a total of 5,256 respondents. The questionnaire covered a wide range of topics, requiring an average of 40 minutes to complete. In our analyses, we restricted the sample to individuals aged between 18 and 85 who gave valid answers to all MAR procedures (i.e., the dependent variables). We had to exclude some respondents due to small case numbers (e.g., six who identified as neither male nor female) or missing values. Our final sample consisted of 3,599 respondents.

We ran linear regression models (with robust standard errors), with the moral acceptance of the various MAR procedures as dependent variables. Specifically, respondents were asked the following: “For each procedure listed, please indicate spontaneously…how morally acceptable you consider it to be.” The possible

answers ranged from 0 (*not at all morally acceptable*) to 4 (*perfectly morally acceptable*). A total of nine different MAR procedures were mentioned in the CHARLS questionnaire. These were insemination, in-vitro-fertilization (IVF), sperm donation, egg donation, embryo donation, surrogacy, egg freezing, embryo freezing, and PGT. The respondents were given the following brief descriptions of the various technologies:

1. Artificial insemination: Instruments that are used to insert sperm into the cervix or uterus.
2. Artificial fertilization outside the body, e.g., IVF (fertilization of the egg in a laboratory).
3. Sperm donation: A man provides sperm for use by third person(s).
4. Egg donation: A woman provides eggs to third person(s).
5. Embryo donation: Two people provide embryos to third person(s). Respondents were given the additional information that a fertilized egg is called an embryo when it has started to develop. In an embryo donation, the donated embryo is implanted selectively into the uterus. After the 10th week of pregnancy, the unborn child is no longer called an embryo, but a fetus. From then on, all internal organs are fully developed.
6. Surrogacy: A woman gives birth to a child for someone else.
7. Egg freezing, so as to be able to have children later on.
8. Embryo freezing, so as to be able to have children later on.
9. PGT: A selection of embryos is made after examination of their genetic makeup.

To determine the general moral acceptance of MAR, we used a summary index ranging from 0 to 36, where zero represents complete moral rejection of all MAR procedures and 36 represents complete moral acceptance of all procedures (only respondents who gave a valid answer to all procedures were included). Additionally, we used two summary indices (ranging between 0 to 16) to account for those procedures involving third-party contributions (i.e., sperm, egg and embryo donation and surrogacy) and those not necessarily involving third parties (i.e., insemination, IVF, and egg and embryo freezing).

Our primary explanatory variables relate to the domain of religion. To assess the influence of religion, we use four different variables, each reflecting a different facet of this construct. First, we consider membership in a religious community (*religious affiliation*). Participants were initially asked whether they belonged to a religious community. If they answered affirmatively, they were then asked to specify their religious affiliation. For Christians, an additional filter question was used to ask for further details. Our variable distinguishes between no affiliation, Catholic, Protestant, Evangelical, other Christian (e.g., Jehovah's Witnesses), and Muslim. Due to their diverse affiliations and small number, we decided to exclude individuals belonging to other religions from the analysis ($n = 24$), as well as Christians who did not indicate their denomination ($n = 26$). Second, we include the importance that religion/spirituality played in childhood (*religious socialization*). The question in the survey was: "What part did spirituality or religion play in your childhood?" This variable differentiates between (1) *none*, (2) *a small part* (e.g., only a few special occasions involved the church/religion/spirituality), (3) *a medium part*, and (4) *a big part* (part of everyday life). Third, we add a self-assessed level of religiosity (*individual religiosity*), which ranges between 1 (*not at all*) to 4 (*very much*). Representing the dimension of practice, we add the frequency of prayer within the last 12 months (*religious practice*). Respondents were asked: "How often have you prayed in the last 12 months?" We included five categories: (1) *never*, (2) *at least once*, (3) *at least every two months*, (4) *at least once per week*, and (5) *daily*. The dimensions of religion are included in the models as separate variables. As there is a risk of multicollinearity in the models, we tested for this and found that the VIF values were always well below 5.

Other explanatory variables are described below. Age is included in the model as a continuous variable. Some studies suggest that the effect of age on attitudes toward MAR may follow a quadratic pattern, where individuals nearing the end of their reproductive years show greater acceptance (compared to both younger and older individuals). We do not observe this trend in the CHARLS dataset, however. Instead, a descriptive graphical analysis reveals a clear downward trend, indicating that acceptance decreases with age. The gender variable distinguishes between male and female. Respondents who identified as another gender had to be excluded due to the low number of cases.

The previous use of MAR procedures was defined as follows: All procedures included in the moral acceptance summary index were considered, except for embryo donation, which was not covered in the questionnaire. Hormone treatments were also included, as they are essential for IVF and commonly used as a first step to induce pregnancy.

We also control for sociodemographic variables that have been shown to be important determinants of attitudes toward MAR in the research literature. The residential area variable differentiates between different types of urban and rural areas. Specifically, we included: (1) *large cities* (more than 100,000 inhabitants), (2) *suburban areas* (suburbs or outskirts of a city), (3) *small or medium-sized towns and their surroundings* (10,000–100,000 inhabitants or with historical town privileges, including surrounding agglomerations), and (4) *rural areas* (farms, mountain hamlets, and villages with fewer than 10,000 inhabitants). The education variable categorizes respondents into six groups: (1) *basic education* (no education completed or only compulsory schooling), (2) *vocational training*, (3) *upper secondary education*, (4) *professional education* (master craftsperson's diploma, federal diploma of higher education, or diploma from a professional education institution), (5) *tertiary education* (degree from a university of applied sciences or teacher training college), and (6) *higher tertiary education* (all degrees from universities or ETHs).

Table 1 contains the descriptive statistics for the sample studied. In terms of demographic characteristics, we find that women are slightly overrepresented in the data, as are people with higher education. The average age is just under 49, and most respondents (44%) live in rural areas. 9% of respondents (or their partners) have had experience with at least one of the MAR procedures (including hormonal treatment). The following picture emerges for the various dimensions of religion: More than half the respondents in our sample have no religious affiliation (54.9%), almost a quarter are Catholic (23.9%), 15.9% are Protestant, 3.1% belong to an Evangelical church, 1.3% to other Christian groups, and 0.9% are Muslim. Compared to the Swiss population (see Figure 1), the sample is significantly less religious, particularly regarding Islam. This is due to the underrepresentation of foreign nationals or people with a migration background. Despite the small number of cases for other Christian groups and Muslims, we have decided to include these groups in our analyses, as they make up a not-insignificant proportion of the Swiss population. However, we ask that the results be interpreted with caution. Regarding the part that religion/spirituality played in childhood, 18.1% of respondents state that it played no part, 36.9% say it played a small part, while for 28.8% it played a medium part and for 16.2% a big part. As far as religiosity is concerned, 37.9% describe themselves as not religious at all, 29% as not very religious, 27.3% as somewhat religious, and 5.9% as very religious. Finally, when asked how often they have prayed in the last 12 months, 47.2% respond "never," 15.2% have prayed at least once, 13% at least every two months, 8.4% at least once a week, and 16.2% daily. Looking at the dependent variable, we can see that, on average, respondents are generally quite accepting of MAR procedures, with an average score of 20.2 (on a scale of 0 to 36). However, the large standard deviation shows that individual

answers deviate considerably from the average. A comparison of the two indices for treatments with or (potentially) without third-party involvement shows that the average acceptance of MAR procedures without third-party involvement is noticeably higher. This trend is also visible to some extent in the individual measures. The average moral acceptance is highest for artificial insemination (3.1), where medical intervention in reproduction is minimal. This is followed by IVF (2.7) and sperm donation and egg freezing (both 2.6). Embryo donation and surrogacy are well below this (1.7), and PGT is the least accepted by respondents (1.4 on average). An overview of the detailed distribution of the MAR procedures and the mean values for all dependent variables according to religious affiliation can be found in the appendix (cf. Supplementary File, Table A1).

Table 1. Sample descriptive statistics, or percentages.

Variable	Categories	Frequency	Mean (std. dev.)/ percentage	Range
Index MAR procedures			20.2 (9.3)	0–36
Index MAR without 3rd party involvement			10.3 (4.3)	0–16
Index MAR with 3rd party involvement			8.4 (4.7)	0–16
Artificial insemination			3.1 (1.1)	0–4
IVF			2.7 (1.3)	0–4
Sperm donation			2.6 (1.3)	0–4
Egg donation			2.4 (1.3)	0–4
Embryo donation			1.7 (1.4)	0–4
Surrogacy			1.7 (1.4)	0–4
Egg Freezing			2.6 (1.4)	0–4
Embryo Freezing			1.8 (1.5)	0–4
PGT			1.4 (1.4)	0–4
Gender	Woman	2,006	55.7%	
	Man	1,593	44.3%	
Age			48.8 (16.3)	
Residency area	Large cities	546	15.2%	
	Suburban areas	339	9.4%	
	Smaller towns	1,128	31.3%	
	Rural areas	1,586	44.1%	
Education	Basic education	132	3.7%	
	Vocational training	976	27.1%	
	Upper secondary	470	13.1%	
	Professional	662	18.4%	
	Tertiary	534	14.8%	
	Higher tertiary	825	22.9%	
Use of MAR	No/DNA	3,275	91.0%	
	Yes	324	9.0%	

Table 1. (Cont.) Sample descriptive statistics, or percentages.

Variable	Categories	Frequency	Mean (std. dev.)/ percentage	Range
Religious affiliation	None	1,975	54.9%	
	Catholic	858	23.9%	
	Protestant	571	15.9%	
	Evangelical	113	3.1%	
	Other Christian	48	1.3%	
	Muslim	34	0.9%	
Role of religion in childhood	None	650	18.1%	
	Small part	1,327	36.9%	
	Medium part	1,037	28.8%	
	Big part	585	16.2%	
Religiosity	Not at all	1,363	37.9%	
	Not very	1,044	29.0%	
	Somewhat	981	27.3%	
	Very	211	5.9%	
Frequency of praying	Never	1,699	47.2%	
	Once per year	546	15.2%	
	Every two months	468	13.0%	
	Once per week	301	8.4%	
	Daily	585	16.2%	
N		3,599	100.0%	

Source: CHARLS, wave 1, unweighted.

5. Empirical Results

Table 2 shows the results of the linear regression analysis of the covariates of general moral acceptance of MAR procedures. The summary index as the dependent variable includes all nine procedures. We present five models, with the first model containing only the control variables and the following four models adding the main explanatory variables for religion.

The first model shows that age is negatively correlated with general moral acceptance of MAR. The older a person is, the less accepting they are. Urban contexts seem to be associated with more positive attitudes, while living in the countryside is correlated with a less accepting attitude. There is a positive correlation with education: people with a higher level of education tend to have a more positive attitude toward MAR. For instance, university graduates score almost 4 points higher on the MAR index than people with vocational training. The previous use of MAR procedures also has a strong and significant effect on moral acceptance.

In model 2, we add religious affiliation and find partial support for our hypotheses. All respondents with a religious affiliation are significantly less likely to accept MAR than those without (H2b). Contrary to our assumption, we find that, on average, Muslims are by far the least likely to accept MAR, closely followed by

Table 2. Moral acceptance of MAR procedures (index). Results of linear regressions.

	Model 1 (Coef.)	Model 2 (Coef.)	Model 3 (Coef.)	Model 4 (Coef.)	Model 5 (Coef.)
Gender					
Woman (ref.)					
Man	−0.06	−0.09	−0.21	−0.37	−0.51
Age (centr.)	−0.14***	−0.14***	−0.13***	−0.12***	−0.11***
Residency area					
Large cities	1.29**	1.15**	1.14**	1.04*	0.96*
Suburban areas	1.03	1.06*	1.04*	1.13*	1.02*
Smaller towns (ref.)					
Rural areas	−0.81*	−0.65	−0.63	−0.54	−0.49
Education					
Basic	−0.93	−0.37	0.02	0.62	0.63
Voc. training (ref.)					
Upper sec.	0.99*	1.11*	1.17*	1.07*	1.05*
Professional	0.48	0.24	0.32	0.17	0.00
Tertiary	1.84***	1.59***	1.80***	1.51***	1.37**
Higher tert.	3.65***	3.35***	3.56***	3.33***	3.19***
Use of MAR					
No/DNA (ref.)					
Yes	3.70***	3.86***	3.94***	3.90***	3.94***
Religious affiliation					
None (ref.)					
Catholic		−2.56***	−1.96***	−0.76	−0.79*
Protestant		−1.87***	−1.88***	−0.68	−0.56
Evangelical		−8.70***	−7.64***	−4.63***	−3.91***
Other Christian		−5.00***	−3.72**	−0.48	−0.35
Muslim		−10.31***	−9.33***	−6.06***	−5.93***
Role religion childhood					
None			−0.01	−0.25	−0.26
Small part (ref.)					
Medium part			−0.89*	−0.24	−0.12
Big part			−2.98***	−1.60***	−1.15*
Religiosity					
Not at all (ref.)					
Not very				−1.20***	−0.97*
Somewhat				−3.07***	−1.74**
Very				−7.44***	−4.95***
Frequency praying					
Never (ref.)					
Once per year					−0.43
Every two months					0.03
Once per week					−2.55***
Daily					−3.52***
Intercept	18.64***	20.04***	20.51***	21.27***	21.55***
R^2	0.13	0.18	0.19	0.21	0.23
AIC	25775.03	25590.91	25547.18	25439.85	25392.21
BIC	25849.29	25696.11	25670.94	25582.19	25559.29
N	3,599	3,599	3,599	3,599	3,599

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Source: CHARLS, wave 1, unweighted.

Evangelicals. Other Christian denominations follow, with Catholics and Protestants exhibiting the highest levels of acceptance among religiously affiliated groups. Including religious affiliation in the model alters the effects of place of residence, suggesting that religious individuals are more likely to live in rural than urban settings.

Model 3 also considers the role that religion played in childhood. Here we find that people for whom religion played a major role in childhood have a significantly more negative view of MAR in general, supporting H3. The effect for religious affiliation decreases in this model, probably indicating patterns of religious reproduction across generations. That is, individuals who grew up in families where religion played a dominant role seem to maintain this religion. Model 4 strongly supports H4 by showing that the more religious a person considers themselves, the less likely they are to accept MAR. The addition of this variable significantly reduces the effect of religion in the previous two models. Taking individual religiosity into account means that Catholics, Protestants and other Christians are virtually indistinguishable from the unaffiliated in terms of their general moral acceptance of MAR procedures (i.e., the effects become insignificant). Only Muslims and Evangelicals continue to be significantly less supportive. Finally, model 5 adds the dimension of religious practice. It shows, partially in support of H5, that only very regular practice has a significant negative correlation with attitudes to MAR. Compared to people who do not pray at all, those who pray daily score on average 3.5 points lower on the index, and those who pray weekly score 2.6 points lower.

To get a more detailed picture, we ran the same models for each MAR technique. Table 3 shows the results, indicating only the covariates for the religious dimensions (similarly to model 5 in Table 1). The full models are available in the appendix (cf. Supplementary File, Table A3). The intercept/constant is shown at the bottom, indicating the acceptance of a respondent with average characteristics (i.e., operationalized by the mean age and, in each case, the most frequent category). For example, a 49-year-old woman who lives in a smaller town, has a vocational qualification, has no religious affiliation, for whom religion or spirituality played only a minor role in childhood, who sees herself as "not religious at all" and has not prayed at all in the last 12 months has an average score of 2.58 with respect to the moral acceptance of egg donation (on a scale of 0 = *not at all acceptable* to 4 = *very acceptable*). Ceteris paribus, a Muslim woman would have an average score 1 point lower (i.e., 1.58).

Overall, the results for the individual techniques support the empirical results found for the summary measure. However, there are some differences. Protestants are most likely to have a positive attitude toward insemination and IVF, even compared to religiously unaffiliated respondents, while we do not find a significant effect for any of the other religious groups. For the other MAR procedures, Muslims are again significantly less likely to find the procedures morally acceptable, followed by Evangelicals. Compared to the unaffiliated, attitudes toward embryo donation, surrogacy, embryo freezing, and PGT are also significantly less likely to be positive for Catholics and Protestants. The role of religion in childhood is only slightly significant for those who grew up in families where religion played a big part (vs. a small part), and only for five of the nine procedures considered. As far as the degree of religiosity is concerned, we find that very religious people are significantly less in favor of each MAR procedure than those who are not religious at all. This is only partially the case for the two middle categories (*not very religious*; *somewhat religious*). In relation to religious practice, we find that people who pray regularly are least in favor of these procedures. Overall, our findings support H5: the more committed a person is to their personal religious practice (i.e., praying), the less approving of MAR procedures they tend to be.

Table 3. Moral acceptance of individual MAR procedures. Results of linear regressions.

	Insemination (Coef.)	IVF (Coef.)	Sperm Donation (Coef.)	Egg donation (Coef.)	Embryo Donation (Coef.)	Surrogacy (Coef.)	Egg freezing (Coef.)	Embryo Freezing (Coef.)	PGT (Coef.)
Religious affiliation									
None (ref.)									
Catholic	0.04	0.04	−0.05	−0.09	−0.16**	−0.19**	−0.07	−0.18**	−0.13*
Protestant	0.12*	0.14*	0.01	−0.06	−0.15*	−0.12	−0.05	−0.31***	−0.15*
Evangelical	−0.15	−0.31*	−0.55***	−0.59***	−0.52***	−0.51***	−0.43**	−0.40**	−0.46***
Other Christian	0.16	0.15	−0.21	−0.08	−0.06	−0.20	−0.01	−0.05	−0.05
Muslim	−0.27	−0.33	−0.89***	−1.00***	−0.76**	−0.86***	−0.79***	−0.53*	−0.48*
Role of religion in childhood									
None	−0.09	−0.13*	0.07	0.00	−0.03	0.06	−0.03	−0.12	0.01
Small part (ref.)									
Medium part	0.02	−0.03	−0.05	−0.02	−0.01	0.01	−0.03	0.01	−0.01
Big part	−0.07	−0.03	−0.17*	−0.16*	−0.13	−0.08	−0.15*	−0.18*	−0.18**
Religiosity									
Not at all (ref.)									
Not very	−0.14**	−0.11	−0.12*	−0.08	−0.12	−0.02	−0.05	−0.09	−0.24***
Somewhat	−0.19**	−0.22**	−0.27***	−0.21**	−0.23**	−0.13	−0.14	−0.09	−0.25**
Very	−0.56***	−0.70***	−0.73***	−0.80***	−0.56***	−0.42***	−0.52***	−0.34*	−0.34**
Frequency praying									
Never (ref.)									
Once per year	−0.02	−0.05	0.02	−0.02	−0.12	−0.04	−0.08	−0.13	−0.01
Every two months	−0.01	0.01	0.08	0.05	−0.04	−0.04	0.00	−0.06	0.04
Once per week	−0.20*	−0.31**	−0.23*	−0.34***	−0.39***	−0.25**	−0.35***	−0.33**	−0.15
Daily	−0.36***	−0.45***	−0.43***	−0.38***	−0.36***	−0.31***	−0.39***	−0.53***	−0.31***
Intercept	3.12***	2.77***	2.75***	2.58***	1.98***	1.95***	2.81***	2.05***	1.55***
R^2	0.14	0.16	0.17	0.19	0.15	0.11	0.15	0.14	0.13
N	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; all models control for age (centered), gender, residence area (urban/rural), education, and previous use of MAR. Source: CHARLS, wave 1, unweighted.

As there seems to be a much stronger rejection of MAR procedures involving third parties (sperm, egg and embryo donation, and surrogacy), we ran two different models for the relevant procedures (summary indices). We left out PGT in this comparison, as attitudes toward this technology are very negative overall. Accordingly, the two indices range from 0 to 16, each including four MAR procedures. Figure 2 shows the corresponding covariates and confidence intervals for the religion items of these indices (controlled for the same variables as in model 5 in Table 2). Full models are available upon request. The graphical representation clearly shows that MAR procedures that do not (necessarily) involve third parties' gametes, embryos, or wombs are slightly more accepted overall than those that do, but the difference is not statistically significant (H6).

Overall, the analyses presented support H1, that higher levels of religiosity will be associated with lower moral acceptance of MAR procedures. In terms of religious affiliation, the results partially support H2a. In our sample, Muslims are most likely to reject MAR technologies, followed by Evangelicals. Both groups are significantly less accepting of MAR than Catholics, who in turn differ significantly from individuals with no religious affiliation. However, religiously unaffiliated people do not differ significantly in their attitudes from other Christian groups, so H2b is also only partially supported. Similarly, H3 is partially confirmed: Only those socialized in families where religion played a big part in everyday life are less likely to have a positive attitude toward MAR. In contrast, the data clearly support H4: The more religious a person considers themselves, the less likely they are to accept MAR. There is also clear evidence that people who pray more often are less accepting of MAR procedures (H5). Finally, H6 is not supported by the data. Although there appears to be a tendency toward lower acceptance of MAR procedures involving third parties, the difference is not statistically significant. This result may reflect the fact that even measures not explicitly involving third parties can nonetheless involve them (e.g., IVF with donor sperm).

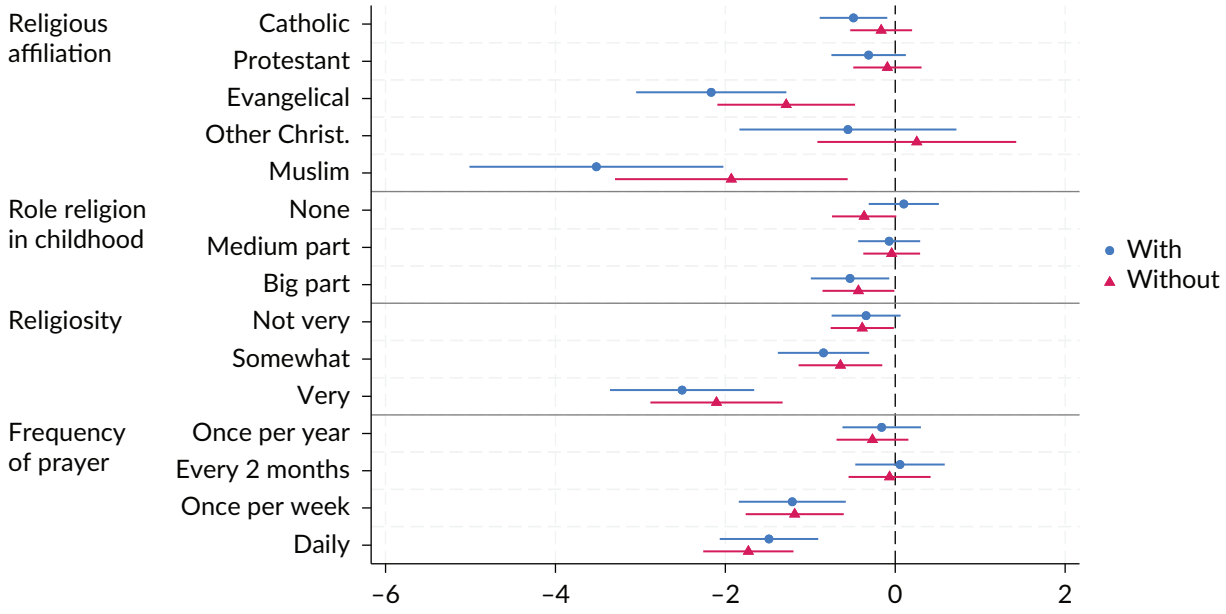

Figure 2. Moral acceptance of MAR procedures with or without third-party involvement. Source: CHARLS, wave 1, unweighted; separate linear regression models.

6. Conclusion

The current literature on the covariation of religiosity and attitudes toward MAR is still rather sparse. It usually focuses on only a few MAR procedures, does not systematically consider the different dimensions of religiosity, and is often based on samples from selected groups such as women or MAR users. In our analyses, we therefore aimed to examine how various dimensions of religiosity relate to attitudes toward a broad range of MAR procedures in the general Swiss population. We considered both a composite index covering nine MAR techniques and individual evaluations of each procedure.

Overall, our findings show a distinct pattern of acceptance across different religious groups, with religion—measured through affiliation, religious socialization, self-assessed religiosity, and frequency of praying—emerging as a key determinant. While all religiously affiliated groups tended to express lower moral acceptance of MAR than non-affiliated individuals, the extent varied considerably. Muslims and Evangelicals consistently showed the lowest levels of acceptance, followed by other Christian groups, with Catholics and Protestants displaying relatively more favorable attitudes. However, these differences diminished substantially when we controlled for subjective religiosity and frequency of prayer, indicating that religious commitment is more critical than affiliation alone.

The negative attitude of Muslims toward MAR contradicted our assumption. Although caution is advised in interpreting the results due to the small number of cases, this finding is consistent with those of Szalma and Djundeva (2019). They analyzed 42 European countries and found that Muslims were the religious group with the lowest acceptance of assisted reproduction (insemination and IVF). For Switzerland, Mertens (2025) similarly found a lower acceptance rate among Muslims. Religious socialization also influenced attitudes, albeit more modestly. Only individuals raised in households where religion played a major part were significantly less accepting of MAR, suggesting an intergenerational transmission of more conservative values. In contrast, the strength of subjective religiosity showed a clear and consistent negative association with MAR acceptance. Those identifying as "very religious" were significantly less supportive than those who described themselves as not religious at all. Frequent prayer, representing the dimension of religious practice, was also associated with lower acceptance. Individuals who reported praying daily or weekly scored significantly lower on the MAR acceptance index, supporting the idea that religious behavior is a meaningful expression of underlying values that shape moral judgments about reproductive technologies. Finally, when comparing attitudes toward different types of MAR procedures, we found that those involving third-party contributions (e.g., donor gametes, surrogacy, or embryo donation) met with greater moral resistance, especially among highly religious individuals. However, the difference in acceptance between procedures with and without third-party involvement was not statistically significant.

In summary, our findings provide strong empirical support for the hypothesis that higher levels of religiosity—across multiple dimensions—are associated with lower levels of moral acceptance of MAR. These results underscore the importance of considering different dimensions of religion in understanding public attitudes toward reproductive technologies. They also highlight the need for more nuanced and inclusive research, which goes beyond single procedures or narrowly defined populations, offering a more comprehensive view of how religion continues to shape perspectives on assisted reproduction in contemporary societies.

We would also like to highlight some limitations of our analyses. Firstly, the data was not as representative as originally intended. Religiously unaffiliated individuals, women, highly educated respondents, and Swiss citizens were notably overrepresented, while certain groups—including Muslims—were underrepresented in the sample. This should not influence the strength and significance of the covariations found, but it is possible that the results are biased due to the small number of Muslim respondents. As outlined in the theory section, attitudes toward MAR procedures are not monolithic within Muslim communities. And the Muslims in the sample who answered questions on attitudes toward MAR are very religious overall. It is possible that including additional foreign languages in the cover letter and questionnaire would have increased the response rate among Muslims, who often have a migrant background in Switzerland. Further CHARLS waves should attempt to specifically survey these underrepresented (religious) groups. Corresponding data could be used to check whether the results presented would be valid if a larger number of Muslims and other Christians were included.

Secondly, the measurement of religiosity could have been even more nuanced. While several dimensions were included, an item capturing the faith or belief dimension more explicitly would have been desirable. Thirdly, we would like to point out that the data we used for our analyses are cross-sectional and that our results reflect covariances that may suggest, but do not necessarily imply, causal relationships. Future waves of CHARLS data collection could provide further insights in this regard. Future research could examine the acceptance of different MAR techniques (in relation to religiosity) more closely in terms of access criteria: certain techniques might be considered more acceptable if they were reserved for specific groups (e.g., married couples or people with serious hereditary diseases). Further studies could also examine how the protection of life and the status of the embryo (according to religious doctrine) relate to the acceptance of MAR (see, for example, Braunschweig et al., 2025).

Despite these limitations, the CHARLS data is a very rich data source and the most representative on the topic for Switzerland to date. Our study contributes to a more comprehensive understanding of how multiple dimensions of religiosity influence attitudes toward a broad range of MAR procedures. Future research could place greater emphasis on exploring the underlying reasons for the attitudes captured, especially regarding religious beliefs, to further unpack the complex moral landscape surrounding MAR in increasingly pluralistic societies.

Acknowledgments

I would like to thank Jörg Rössel and Dorothea Lüddeckens for their valuable comments and contributions, as well as my colleagues Larissa Fritsch, Maila Mertens, Sandra Gilgen, Angela Christen, and Eva Corba from the Empirical and Normative Knowledge and Data Centre of the URPP "Human Reproduction Reloaded," especially for their support with the CHARLS dataset. I would also like to thank the participants of the URPP "Human Reproduction Reloaded" colloquium for their comments and suggestions on an earlier version of the article. Furthermore, I am grateful to the three anonymous reviewers for their detailed and constructive feedback, as well as to the editors Heike Trappe and Anne-Kristin Kuhnt for their helpful comments and suggestions.

Funding

This work was supported by the University Research Priority Program "Human Reproduction Reloaded" | H2R of the University of Zurich, Switzerland. Publication of this article in open access was made possible through the institutional membership agreement between the University of Zurich and Cogitatio Press.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

At the time of publication, only the first wave of the Swiss Assisted Reproduction Longitudinal Study (CHARLS) was available. The CHARLS dataset will be provided upon reasonable request by the URPP "Human Reproduction Reloaded" (contact the data center of the URPP or the author). In the coming years, the CHARLS data will be made available to the scientific community at large.

LLMs Disclosure

DeepL Translate was used to help the author with the initial formatting of the English text.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2025 • Volume 13 • Article 10362
https://doi.org/10.17645/si.10362

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ARTICLE

Open Access Journal

Lesbian Couples' Assisted Reproductive Technologies Trajectories in Switzerland and Abroad: Navigating Heteronormative Norms and Healthcare Disparities

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Submitted: 24 March 2025 **Accepted:** 26 June 2025 **Published:** 27 August 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

On July 1, 2022, marriage became legal for same-gender couples in Switzerland, granting married lesbian couples access to assisted reproductive technologies (ART) and recognition of co-maternity from birth. Before this change, lesbian couples had to resort to reproductive travel to access ART abroad. Yet, significant barriers remain. Restrictive Swiss regulations continue to prohibit certain technologies, such as egg donation (i.e., reception of oocytes from a partner), even for married couples. Legal constraints are further compounded by financial inequities: Unlike heterosexual couples, lesbian couples are excluded from insurance coverage for ART because they do not meet the medical definition of infertility. Additionally, Swiss childbirth and parenting culture are deeply heteronormative, and healthcare providers—including fertility clinics—are ill-prepared to welcome lesbian couples. As a result, some couples will continue to turn to reproductive travel, with Swiss health providers involved in their medical care trajectories before and after insemination abroad. Drawing on interviews with Swiss lesbian couples who pursued ART abroad, this article examines their experiences with reproductive travel. How did they access information to select a country and a clinic? And how did they navigate the constraints of reproductive travel alongside work, family, and social obligations? Using a reproductive justice framework, this article analyzes how recent legal changes fall short of ensuring equitable access to parenthood for same-gender couples. It highlights enduring structural inequalities embedded in ART regulations, which intersect with socio-economic norms and disparities in access to medical treatment.

Keywords

assisted reproductive technologies; heteronormativity; minority stress; queer reproduction; reproductive justice; reproductive travel; Switzerland

1. Introduction

Originally designed for wealthy, white, heterosexual married couples, assisted reproductive technologies (ART) emerged in the 1980s in high-income countries as a solution to infertility (Mamo, 2007), reinforcing the stratification of reproduction (Colen, 1995). For decades (1980–2000), access to ART remained restricted to married heterosexual couples, excluding unmarried couples, single women, and LGBTQ+ individuals, who were deemed unfit for parenthood (Gabb, 2017; Golombok, 2015). During this period, lesbian couples relied on community-based resources to conceive (Dempsey, 2008; Dempsey et al., 2022; Mamo, 2007). From the early 2000s onwards, lesbian couples gradually gained access to fertility clinics and ART in pioneering "reprohubs" (Inhorn, 2015), such as California (Mamo, 2007) and Spain (Roca i Escoda, 2015, 2016, 2017).

The reproductive justice movement stresses that some groups face discrimination and inequities based on race, class, gender identity, and sexual orientation in the exercise of their reproductive rights (Ross, 2006; Ross & Solinger, 2017). Over the past decade, reproductive justice has emerged as a critical framework for analyzing the stratification of reproductive rights, highlighting the systemic inequalities embedded in reproductive policies (Briggs, 2018; Haintz et al., 2023). As both a theoretical and epistemological framework, reproductive justice articulates how intersecting systems of oppression—such as racism, classism, homophobia, and transphobia—affect reproductive experiences, including access to care and treatments. Examining these inequalities reveals that ART does not encompass neutral medical tools; rather, these technologies act as instruments of social and moral selection, legitimizing certain forms of family-making while marginalizing others. These dynamics underscore the relevance of the reproductive justice framework in advancing equitable access to ART.

Although an aspect of reproductive justice, queer reproduction also involves specific ethical and justice issues. LGBTQ+ people continue to face systemic barriers to parenthood, particularly concerning unequal access to ART, marriage, and legal parent recognition (Mamo, 2018). As a result, family making is a "legal maze" for most LGBTQ+ parents (Leibetseder & Griffin, 2020, p. 313), and many are forced into reproductive travel, which further stratifies access to parenthood as it requires both financial and time resources (Leibetseder & Griffin, 2018).

Reproductive travel refers to the movement of individuals seeking ART from a place where these services are unavailable, restricted, or unaffordable to a location where they can obtain the desired medical care (Pennings, 2002). This phenomenon is also referred to in the literature as "cross-border reproductive care" (Pennings et al., 2008), a term offering a standardized framing commonly used in clinical and policy contexts. Other scholars have instead used "reproductive exile" (Inhorn & Patrizio, 2009) or "reproductive exclusion" (Desy & Marre, 2022) to emphasize how legal, institutional, and social inequalities compel individuals to travel abroad to exercise their reproductive rights. In this article, we adopt the term "reproductive travel" to foreground the embodied and logistical dimensions of these journeys without assuming a single explanatory frame. Occurring globally, reproductive travel is deeply intertwined with broader reproductive justice issues, as access to ART is shaped by intersecting inequalities related to gender, sexuality, legal status, and economic resources.

Before July 1, 2022, lesbian couples could not marry in Switzerland. Sperm donation is restricted to married couples, so they had to travel abroad to access ART. In 2019, these couples were among the estimated

500 Swiss individuals or couples who traveled abroad for ART, alongside heterosexual couples seeking egg donation and single women (Siegl et al., 2021). However, as Siegl et al. (2021) emphasize, this number likely underestimates the actual scale of reproductive travel from Switzerland, as many cases remain unrecorded. For lesbians specifically, many unrecorded cases exist in which individuals bypassed Swiss medical institutions by ordering sperm directly or using a known donor and performing self-insemination. The legalization of same-sex marriage in 2022 granted married lesbian couples the right to access ART in Swiss clinics and the recognition of co-maternity from birth. Switzerland lagged behind other European countries, legalizing ART for lesbian couples more than a decade after Spain (2005), Denmark (2006), and Belgium (2007; Büchler & Parizer, 2018). Although this legal reform reduced the need for reproductive travel, barriers remain, prompting some lesbian couples to continue seeking treatment abroad.

Indeed, Switzerland maintains some of the most restrictive ART regulations in Europe (Engeli & Roca i Escoda, 2012). For instance, egg donation is strictly banned, which is legally justified by the prohibited separation of genetic and gestational motherhood, a principle deemed "unnatural" (Bühler, 2014; Mesnil, 2020). This prevents lesbian couples from using the reception of oocytes from partner (ROPA), a technique in which one partner's oocyte is fertilized in vitro and transferred to the other partner's uterus. This method enables both intended mothers to share a biological connection to pregnancy (Roca i Escoda, 2016). Currently, lesbian couples seeking this procedure must travel abroad. As an additional legal restriction in Switzerland, fertility clinics assign sperm donors based on phenotype matching, leaving intended parents with little agency over donor selection.

These legal constraints reflect underlying gender and sexuality norms that shape family policy and reproductive rights in Switzerland. Giraud and Lucas (2009) described this framework as "neo-maternalism," a conservative ideology that reinforces women's primary role in domestic work and childcare (Bornatici et al., 2021; Le Goff & Levy, 2016). Furthermore, childbirth and parenting culture in Switzerland remain deeply heteronormative (Chautems, 2022; Chautems & Maffi, 2021), drawing on hegemonic norms that generate discourses and practices that naturalize and legitimize the heteronuclear family model while marginalizing all other family configurations (Mamo, 2007). Consequently, Swiss healthcare providers are ill-prepared to welcome non-hegemonic couples, including in fertility clinics (Gouilhers et al., 2023).

In addition to legal and cultural barriers, practical and financial obstacles shape ART access in Switzerland for all intended parents, with variations depending on their marital status. Because lesbian couples do not meet the legal definition of infertility, they are excluded from any insurance coverage for ART, making treatment abroad often more affordable than in Switzerland. Single women face similar challenges to those encountered by lesbian couples, as they too fall outside the legal and normative framework of the heterosexual, nuclear family (Belaisch Allart, 2022; Krajewska, 2015; Rozée Gomez & de La Rochebrochard, 2013). Because sperm donation remains restricted to married couples in Switzerland, single women—like lesbian couples before 2022—must travel abroad to access it. These structural inequalities stratify access to reproduction by income and wealth. Married heterosexual couples face high out-of-pocket costs as well. Although some diagnostic tests and up to three cycles of intrauterine insemination may be reimbursed by mandatory basic health insurance (provided the woman is under 40), in vitro fertilization is never covered.

Looking ahead, a new reform is under discussion. In January 2025, the Swiss Federal Council proposed legalizing egg donation and extending ART access to unmarried couples. The Federal Office of Public Health

is currently drafting a revision of the Reproductive Medicine Act, which has regulated ART since 2001. If passed, this reform would allow lesbian couples to access ROPA in Switzerland and remove the requirement of marriage for ART access—two of the key factors currently driving reproductive travel. However, the timeline and outcome of this legislative process remain uncertain.

The focus on lesbian couples in the context of ART is justified by their central role in current debates on reproductive justice, heteronormative family models, and unequal access to reproductive care. Their experiences in fertility clinics reveal how reproduction is structured by inequality: Originally designed for infertile heterosexual couples, ART has long excluded LGBTQ+ people, reinforcing unequal access to parenthood and raising critical issues of reproductive justice (Tam, 2021).

Furthermore, lesbian couples' use of ART challenges dominant heterosexual family norms, questioning the notion that only a father–mother model of parenthood is "natural" or legitimate.

Finally, by focusing specifically on lesbian couples rather than other family configurations, our study offers a unique perspective on the intersection of queer parenthood and socio-legal developments. In several countries, female couples were the first among LGBTQ+ families to benefit from expanded ART policies, though hierarchies of sexuality persist despite these advances. This analytical choice aligns with current debates on stratified reproduction, queer parenthood, and evolving family policies, highlighting how gender and sexual orientation shape access to reproductive rights and redefine family norms.

Based on 22 interviews with Swiss lesbian couples who sought ART abroad, this article explores their experiences with reproductive travel. How did they choose a country and clinic for insemination? How did they coordinate medical follow-ups between Swiss and foreign healthcare professionals? And how did they navigate work absences with their employers and colleagues? Drawing on a reproductive justice framework, we examine how legal changes impact the reproductive choices of lesbian couples in Switzerland. This framework enables us to analyze how Swiss lesbian couples navigate access to ART in a context characterized by structural inequalities and heteronuclear family norms. We also explore how ART regulations shape intended mothers' paths to parenthood, intersecting with socio-economic constraints and disparities in treatment access.

We argue that participants' experiences align with existing research on the discrimination and microaggressions faced daily by sexual minorities. For lesbian couples using ART, the "minority stress" they encounter is closely tied to dominant cultural representations of families, which exclude same-sex parenthood (Haines et al., 2018; Mendez et al., 2016). This exclusion impacts their procreative experiences. Documenting the obstacles they face is essential to addressing gaps in knowledge about the specific healthcare needs of this minority population (Trettin et al., 2006).

2. Methods and Participants

We adopt a qualitative approach based on semi-structured narrative interviews to explore how Swiss lesbian couples navigated access to ART abroad prior to the 2022 legal reform. Framed within a reproductive justice perspective (Ross, 2006; Smietana et al., 2018), we analyze how legal, material, and symbolic factors intersect to shape stratified access to parenthood (Colen, 1995).

The interviews were conducted between April 2022 and November 2023. To ensure diversity while maintaining confidentiality and ethical standards, we employed multiple recruitment strategies. First, we contacted LGBTQ+ parents with whom we had previously collaborated to facilitate access to the field. During this first stage, we used purposive sampling. We then used snowball sampling, a method particularly effective for engaging minority groups (Browne, 2005). Through participant recommendations, we recruited women of various ages, with 70% residing in urban areas and 30% in peri-urban settings.

The final dataset includes 22 interviews with 21 lesbian couples and one single lesbian woman co-parenting with a gay couple, totaling 43 participants. 12 interviews were conducted specifically for this project, whereas 10 interviews drawn from parallel fieldwork were integrated once thematic saturation had been reached. All interviews were conducted in French, and we translated them into English.

All participants were cisgender women aged 31 to 47. Except for two women, all participants were white. They had one or two young children (six months to six years old). The two partners in each couple had comparable levels of education and occupational integration. Out of the 43 participants, 28 held university degrees, and 27 were employed at 80% or more; some individuals may fall into both categories. This is not a sampling bias but a deliberate analytical choice: By neutralizing intra-couple resource asymmetries, we eliminate a variable that could obscure power dynamics and hierarchies within the couple (Digoix, 2020). This allows us to focus on the impact of the socio-institutional framework—legal constraints, medical technologies, and cross-border costs—rather than on economic domination within couples. Indeed, the literature on cross-border reproductive care highlights that the actual ability to travel is already shaped by social selectivity (Inhorn & Gürtin, 2011). 70% of participants lived in urban areas and had diverse ART backgrounds (intrauterine insemination, in vitro fertilization, and ROPA).

2.1. Data Handling: Collection, Protection, and Analysis

The interviews took place in the participants' homes to ensure a confidential setting conducive to intimate narratives. All interviews lasted 60 to 120 minutes and were conducted by the research team. The two partners of each couple were interviewed together, and the single lesbian mother co-parenting with a gay couple was interviewed alone. The interview guide, informed by literature on cross-border ART and reproductive justice, covered five domains: initial motivations, search for information, medical coordination, financial constraints and professional/family organization, and emotional experiences. Two pilot interviews—excluded from the analysis—were conducted to refine the wording of the questions.

Each participant received an information sheet by email outlining the study's objectives, procedures, and confidentiality measures, as well as their right to withdraw at any time. Prior to the interviews, participants signed a consent form guaranteeing the confidentiality and anonymity of their statements. Oral informed consent was then obtained at the beginning of the audio recording. Audio files were immediately encrypted and pseudonymized transcripts are stored on a secure server. All direct and indirect identifiers (such as profession, location, or clinic) were modified or removed. To further protect participants' identities, we followed the recommendations of Béliard and Eideliman (2008). In some cases, we also assigned multiple pseudonyms to the same participant to complicate any attempt at re-identification, particularly within small activist or professional communities where participants may know or work with one another.

The analysis was focused on reproductive pathways and the strategies used to achieve parenthood. Interviews were audio recorded, transcribed, and analyzed using thematic analysis (Beaud & Weber, 2010). Coding was conducted manually using a spreadsheet to identify recurring themes across interviews. A reproductive justice framework informed the creation of coding categories, emphasizing how participants navigated legal, medical, social, financial, and structural barriers; how they accessed or were denied access to ART procedures; and how they articulated their experiences of discrimination, privilege, and the strategies they developed. Codes covered participants' rationales and motivations as well as the challenges encountered throughout the ART process. The resulting categories capture both the diversity of individual trajectories and the shared challenges faced by same-gender couples. Particular attention was paid to the socio-political context shaping the recognition of two-mother families, including their historical development and implications for access to ART.

In the following sections, we unpack the various stages couples navigated, from early information-seeking to the emotional toll of transnational care and public disclosure.

3. Accessing Information: A Laborious Process for "Preconception Mothers"

This section analyzes the documentation and information-gathering work undertaken by intended mothers before even beginning their ART journey. Among our participants, 14 women achieved pregnancy relatively quickly, within one to four insemination cycles. However, eight couples faced greater challenges, requiring three to five years of procedures, multiple techniques, and travel to different countries (Denmark, Spain, the UK, and Belgium). Their choice of destination was influenced by various factors, including language, donor (non-)anonymity, the absence of mandatory psychological counseling for same-sex couples (as required in Belgium), and the perception that procedures in certain locations were easier or less intrusive. While this article focuses on medical pathways to pregnancy, it does not address the issue of donor selection, which warrants a separate analysis. Previous studies have shown that intended mothers choose sperm donors based on various criteria, such as phenotype and racial matching (Dahl & Andreassen, 2023; Nordqvist, 2011, 2012; Roca i Escoda, 2016), or socio-cultural affinities (Côté & Lavoie, 2016; Mamo, 2007).

Interestingly, most participants were initially reluctant to pursue ARTs. Because they did not have fertility issues, they perceived the medicalization of the process as a significant constraint. Many first explored alternative solutions, such as mutual aid and self-insemination at home, either with sperm from a known donor (sometimes as part of a co-parenting arrangement) or with sperm ordered online and delivered by mail. However, these initial attempts often proved unsuccessful, eventually leading them to seek more structured assisted reproduction procedures.

In neoliberal regimes, people are expected to inform themselves about health risks and implement good practices (Rose, 2006). This is even more the case for LGBTQ+ parents. They must possess extensive "cultural health capital" to access information (Shim, 2010) in a heteronormative reproduction culture in which fertility treatments are medically and legally designed for heterosexual couples. These constraints deepen inequities between intended parents and reinforce stratification in care access. In our study, most participants held a higher education degree, facilitating access to information and health literacy.

Nevertheless, during the preconception stage, participants could not rely on healthcare providers or Swiss fertility clinics for information in the same way heterosexual couples typically do (Bize et al., 2022). Instead, they had to independently research their options or seek guidance from LGBTQ+ associations for (intended) parents to identify which country, clinic, and techniques would best meet their specific needs.

In this way, long before conception, the couples who participated in the study showed a strong commitment to their parenting project, aligning with an "intensive parenting culture" (Faircloth & Gürtin, 2018). This trend, documented since the late 1990s in high-resource countries, primarily targets mothers, pushing them to meet increasingly high expectations to ensure their child's optimal development (Lee et al., 2014). In this context, parenting begins even before pregnancy. For lesbian couples, it involves extensive planning and decision-making—a process during which they become what we refer to as "preconception mothers." This theoretical framework is reflected in the lived experiences of the couples in our study, who had to navigate legal, medical, and social barriers and constraints to make informed decisions.

Camille and Justine were in their late 30s. Camille worked in marketing and Justine worked in digital advertising. Both held higher education degrees. When they decided to start a family, they attended a local LGBTQ+ association meeting for prospective parents. There, they met a lesbian couple who had been to a fertility clinic in Copenhagen. The two mothers were invited to share their experience. Inspired by their story, Camille and Justine decided to go to the same clinic: "We listened to several testimonials, including one from two girls who seemed really cool, and it went really well for them….They told us how they did it. They said the gynecologist [from the Copenhagen clinic] was very nice."

Camille and Justine also selected their obstetrician in Switzerland based on a list of "safe" practitioners recommended by the association.

Like Camille and Justine, other participants relied on community-based knowledge from LGBTQ+ associations' meetings for prospective parents, as well as from friends and online support groups. Although these resources provided initial guidance, participants still needed to cross-check the information online—not only on fertility clinic websites but also on forums and other sources.

After conducting some preliminary online research, Diane and Isaline decided to pursue ART in Spain. They later participated in an event organized by an LGBTQ+ association for prospective parents, which reinforced their decision, especially because they had found a clinic where they could communicate in French. They had already arranged their first visit, including flights and accommodation, when Diane began to feel uncertain. She conducted additional research online, which led her to question their plan:

> I did some research afterward and found that British law was, in fact, the closest to Swiss law when it came to ART for heterosexual couples. And I said to Isa…I was assuming that Swiss law would eventually evolve—sooner or later—and that if it did, it would likely align with British law. With that in mind, we started looking in London and found a clinic….So we thought, well, let's go and take a language course.

They eventually proceeded with insemination in London, selecting the clinic based on online research. This situation is emblematic of couples' commitment to their parenting project, as they invested significant time in gathering information from various sources—even learning a new language—to navigate the process.

Some couples gathered information exclusively from the internet, becoming largely self-taught. This was the case for Alison and Daniela. While researching ART options for lesbian couples, they came across an interview with a professional soccer player who had used the ROPA technique to start a family with her partner. She mentioned in the interview the clinic where they had undergone treatment in London. Alison and Daniela then searched for information on the clinic and ultimately decided to go there. Before settling on London, they briefly considered Denmark and Spain, gathering information and reaching out to clinics via email:

> In Denmark, we were told no [for ROPA], so we moved on. Then we considered Spain, but as soon as the first clinic said, "No, you must be married," we moved on. And then, shortly afterwards, we found the clinic in London.

Overall, all couples devoted a significant amount of time to online research, exploring techniques, prices, and regulations such as donor anonymity while also assessing clinics' reputations in terms of healthcare and fertility treatments for LGBTQ+ intended parents. They had to untangle complex information, simultaneously weighing different options and demonstrating extensive planning, budgeting, and communication skills—often in a language other than their first. This process required not only significant time and effort but also a great deal of emotional and intellectual investment, as the couples had to navigate a range of complex and often contradictory information. These efforts, while essential for making informed decisions, also highlight the burdens placed on LGBTQ+ parents in a system that privileges heterosexual norms and expectations.

4. Reproductive Travel and Medical Coordination

Accessing and gathering information is a crucial first step, but lesbian couples also face significant challenges in coordinating medical care and traveling for treatment. Before the 2022 legal reform in Switzerland, they were entirely excluded from access to ART and legally recognized paths to parenthood, forcing them into reproductive travel. This form of exclusion from reproductive rights (Desy & Marre, 2022; Inhorn & Patrizio, 2009; Zanini, 2011) reflects deeper structural inequalities and a system of governance that fails to recognize lesbian family formation. The experiences discussed in this article were shaped by a complex interplay of medical, logistical, and social barriers that demanded high levels of coordination and resilience. This section examines how these mobilities are shaped by structural constraints and strategic agency as couples navigate legal restrictions and logistical uncertainties, including those heightened by the Covid-19 pandemic, as many participants resorted to ART abroad during this period (Tsakos et al., 2020).

ART treatments often involve extensive pretreatment medical testing—such as hormone assessments, sexually transmitted infections (STIs) screenings, and fallopian tube examinations—along with consultations to determine appropriate treatment options, such as intrauterine insemination or in vitro fertilization. These tests, often conducted in the home country and sent abroad, require significant logistical coordination and planning. Our interviews reveal that, in the absence of institutional support, participants often had to assume the role of medical coordinators themselves, acting as intermediaries between their Swiss healthcare providers and foreign clinics. This placed the burden of medical administration and communication on the couples themselves, who had to arrange medical examinations, transmit test results, and schedule treatments—often on short notice. Many participants also highlighted the additional emotional strain of having to coordinate their own care in the absence of institutional support.

The experience of Aurore and Clarisse is particularly illustrative. Their ART journey spanned three years and included 16 insemination attempts, a miscarriage, and an unexpected change in treatment protocol before they finally became pregnant. Clarisse recalled the relentless demands of medical coordination:

> Lots and lots of medical appointments, lots of expenses, lots of attendance. And then, every time we did these tests, we had to send them to Belgium. And then, all of a sudden, we had to make ourselves available. I think I spent half an hour every other day on the phone to Belgium for two or three years.

Many participants emphasized how acting as intermediaries between Swiss healthcare providers and foreign clinics had significant emotional impacts on their journey. Urgently performing tests, sending results to clinics, waiting for feedback, and then rushing to the clinic at the right moment of ovulation is an exhausting process. In the same interview, Aurore emphasized the urgency and unpredictability of the process:

> We had to go and take blood samples early in the morning to make sure the results were sent in time for them to analyze in Belgium. Then we'd be told, "Well, you'll have to come tomorrow," or "Tomorrow you'll need another blood test or ultrasound."

Clarisse and Aurore's experience echoes that of Laurène and Amélie, who also traveled to Belgium. They described the rigid medical scheduling they had to follow, coordinating ultrasounds with clinic requests and embarking on a 5-hour drive overnight to arrive on time:

> Peak ovulation lasts a certain amount of time. You really have to be on that schedule….When they [the clinic] tell me at 5:30 pm that we have to be there at 1:30 pm the next day and not at 4 pm, then I have to be there at 1:30 pm. It's because they've really calculated that we'll be at the top of our game and we're putting all the chances on our side.

The precision required in this process added significant stress, as couples had to ensure they could travel within narrow time frames. The pressure of potentially missing this critical window created an ongoing sense of urgency, amplifying the emotional burden of reproductive travel.

Despite meticulous planning, schedules could easily be disrupted by unexpected logistical setbacks, which could derail entire cycles. Morgane and Léa shared the emotional toll of the practicalities of travelling abroad by plane during their first attempt in Denmark, which was derailed by unforeseen travel delays:

> The first attempt was in September 2016. But we didn't leave in September. We had prepared everything. The plane was late—so late that by the time we arrived in Denmark, the clinic was closed. And it was ovulation day. We called them, and they said, "It's too late." We cried in that airport. We really felt our wings being clipped right from the start.

Beyond the logistical and emotional toll, border crossings carried additional stress for lesbian couples, especially concerning anxieties around parental rights. Before Switzerland granted access to marriage and ART to lesbian couples, the non-gestational mother had no legal recognition and had to adopt the child, a process often described as intrusive and discriminatory (Carri & Boulila, 2022). This lack of legal status created ongoing anxieties for families traveling abroad, especially when seeking ART for a second child.

For instance, while the adoption process for their first child was still underway, Diane and Isaline were already seeking ART abroad for a second child. This ongoing legal uncertainty compounded the stress of their reproductive journey. Isaline, the non-gestational mother, described the distress of crossing borders while lacking formal parental recognition. She recalled the unease of traveling back to Switzerland alone with their child, knowing she had no legal rights:

> The other aspect that was quite complicated was that I had no rights over [child's name]. It was always stressful to return alone with her if Diane had to stay an extra day. Crossing borders without being the legal parent—it was nerve-wracking.

The Covid-19 pandemic further exacerbated these challenges, forcing couples to navigate up to four border crossings due to rapidly changing travel restrictions. Amélie and Laurène had initially planned to travel through France to go to Belgium, but they had to adjust their itinerary as multiple European borders closed. They were forced to take a detour through Germany and Luxembourg while ensuring their journey aligned with the precise timing of ovulation. Laurène described how this socio-political situation added "enormous stress to the project," and Amélie highlighted the overwhelming logistical and emotional burden:

> We were keeping abreast of the news, news from all three countries, in fact. To see how things were going, the exchanges, the transits of people, simply because, in fact, we also passed through Luxembourg. But you have to think about it. There are four countries to cross.

Not only did couples have to coordinate medical care and contend with legal uncertainties, they also had to navigate unpredictable border policies, shifting restrictions, and the looming threat of being turned away at any point. This added layer of stress further underscores the emotionally exhausting nature of their journeys.

5. Financial Costs, Medical, and Insurance Coverage Exclusion

Beyond the logistical and legal hurdles of reproductive travel, lesbian couples also face barriers within medical settings, further complicating their access to ART and reproductive care. LGBTQ+ individuals often experience discrimination in healthcare, limiting their access to reproductive and sexual health services (Béziane et al., 2020; Conron et al., 2010). This section emphasizes how financial constraints and medical and insurance exclusions further reinforce existing inequalities and shape lesbian couples' reproductive journeys.

One of the major obstacles participants in this study faced was financial. At the time of the interviews, Swiss health insurers did not cover ART for lesbian couples on the grounds that they were not considered medically infertile (Gouilhers et al., 2023). This exclusion forced couples to bear the full cost of treatment themselves, a burden compounded by the uncertainty surrounding reimbursement for initial medical tests conducted in Switzerland. Fearing rejection, some couples hesitated to submit claims to their insurance, while others found themselves abandoned by their gynecologists, left to navigate the medical process on their own. Isaline described how she and her partner Diane, had to monitor ovulation cycles without professional guidance:

> The second time, my gynecologist didn't agree to do the monitoring. Even though I paid for it, telling myself that the insurance companies wouldn't understand if we booked more appointments. So, I had

> to trust only my cycle, as I was very regular. I would say, "Okay, we'll book in London for such and such date, and it'll be fine."

Beyond medical expenses, the financial burden extended to the cost of travel itself. Given that ART procedures require precise timing, couples often had to book last-minute flights within a 24–36-hour window after ovulation triggering, significantly increasing travel costs. Daniela and Alison, who traveled to London for ROPA, estimated that their expenses for one cycle amounted to approximately 15,000 Swiss francs—more than twice the median Swiss pretax monthly income (Office Fédéral de la Statistique, 2022)—with additional attempts costing around 5,000 francs each time. These figures illustrate the financial barriers that limit access to ART, making reproductive travel an option only for those who can afford repeated trips and associated costs.

Legal restrictions also interacted with medical discrimination, further marginalizing LGBTQ+ individuals in reproductive healthcare. Beyond the outright exclusion from ART in Switzerland, participants often encountered resistance when seeking medical support for their treatment abroad. Existing research has shown that medical professionals may be reluctant to assist patients undergoing ART in another country (Culley et al., 2011), but for lesbian couples, this reluctance was compounded by potentially stigmatizing attitudes. Some obstetricians discouraged them from seeking ART altogether, emphasizing its illegality, while others exerted pressure through intimidation. Aurore and Clarisse, for instance, faced a particularly hostile response from a doctor when they attempted to submit pretreatment medical expenses to their insurance. They recounted that the doctor warned them: "If the insurance asks, I will say that you are a couple of women. I will say that you did this." This reaction illustrates how legal and financial restrictions created a context where some practitioners not only denied care but also actively contributed to a stigmatizing environment.

Despite the numerous constraints research participants faced, their experiences highlight the stratified nature of reproduction and their agency within these limitations. Although they successfully navigated complex legal and medical systems, demonstrating that reproductive travel is not only a forced structural constraint but also a way of asserting reproductive rights (Bergmann, 2011; Zanini, 2011), agency was not equally accessible to all; it was contingent on social and economic resources, such as financial stability and cultural and health capital. These findings align with existing literature highlighting the stratified dimension of reproductive travel (Deomampo, 2019; Miner, 2021; Payne, 2013), demonstrating how exclusion from reproductive rights in one's home country and forced mobility abroad structure shape access to ART and reproduction. Together, these financial, legal, and medical barriers underscore how reproductive travel reflects and reinforces stratified access to fertility care, deepening existing inequalities among intended parents.

6. Navigating Professional Negotiations and Forced Coming Out

This section explores how reproductive travel and ART procedures placed participants in complex situations at work, where communication became a critical concern. Reconciling medical needs with professional life requires a degree of flexibility that is difficult to achieve. This involves justifying frequent absences, which can lead to fear of judgment or prejudice. As a result, participants may feel forced to "come out" to their superiors and colleagues, as it becomes difficult to take unannounced absences without explanation. They

often had to reveal not only their ART project but also their sexual orientation—an experience commonly felt as a double exposure. Often perceived as involuntary, it forces individuals to share an intimate part of their lives at work. When met with support, it can foster trust, yet it is rarely free from intrusive questions or inappropriate remarks. Conversely, a negative reception can create tension or even jeopardize the parenthood project. Couples who approach the topic with equanimity usually benefit from a flexible work environment, sympathetic employers, or financial resources that enable them to manage the unexpected. In all cases, their experiences highlight the extent to which pursuing ART is closely linked to workplace negotiation possibilities and society's representations of same-gender families.

As shown in the previous sections, the need for precise medical coordination while traveling creates a tight time frame and the financial burden of purchasing last-minute tickets, often conflicting with professional obligations. While navigating these demands, participants encountered remarks, misunderstandings, or, conversely, seemingly polite but subtly ambiguous reactions, all of which contributed to minority stress related to their parental aspirations (Amodeo et al., 2018).

Several women shared that they had exhausted all their vacation time, leaving them "drained" by the end of the year. Isaline confided: "It swallowed up all my vacation time, and I ended up without a single day off. All my vacations had been spent on unsuccessful trials, so by the end of the year, I was exhausted." This prolonged fatigue is often compounded by anxiety, as the work organization must constantly adapt to an unpredictable biomedical calendar. When employers are accommodating and colleagues are supportive, the pressure is alleviated. Many women emphasized that the success of these professional negotiations depends on their work environment, the hierarchy in place, and the nature of their job. However, even in favorable workplace environments, the emotional burden remains high (Rozental & Malmquist, 2015). The fear of a negative reaction from an employer due to frequent absences weighs heavily on couples navigating this process.

Some couples described themselves as "lucky" to have flexible working hours, understanding management and the complicity of colleagues who "have their back." However, flexibility largely depends on the nature of the activity. Aurore expressed it bluntly: "We have privileged jobs. Someone who works at Migros [a Swiss supermarket], that's just not possible." Her comment highlights how the ability to navigate the demands of ART is closely tied to one's social and professional capital (Bourdieu, 1986). Most of our participants held skilled positions that granted them a degree of negotiating power with their employers, making it easier to take time off. As one interviewee explained: "I'm lucky that my colleagues have always covered for me. We have intellectual jobs, so we can afford to talk to our bosses and explain what's going on." Camille and Justine also claimed that they have "privileged jobs." Camille, for instance, highlighted the solidarity of a supportive team, which made it much easier for her to take last-minute leave. However, in the past, Justine recalled that "it was only possible because I wasn't working. And when I was working, I was calling in sick."

Even in privileged positions, it is important to remember that the interviewees belong to a double minority that is often discriminated against in the labor market, particularly as women and as lesbians. The involuntary disclosure of sensitive personal information in the workplace, such as maternity plans and medical procedures like ART, can constitute indirect discrimination under EU law (Council Directive 2000/78/EC, 2000). Seemingly neutral workplace policies can, in practice, compel employees to reveal private information, disproportionately affecting individuals based on their sexual orientations. Had these

couples been able to access ART in Switzerland without the need to resort to reproductive travel, this "coming out" situation would not have been necessary. Moreover, few LGBTQ+ individuals in Switzerland choose to come out in the workplace for fear of discrimination and stigmatization (Lloren & Parini, 2017).

Participants' stories reveal a structural inequality: the ability to pursue ART abroad is closely tied to an employee's level of recognition and negotiating power in the workplace. This raises questions about how the professional sphere reinforces a heterocentric family model in which non-normative pregnancies—both due to same-gender parenting and the need to seek care abroad—compel employees to disclose intimate details that heterosexual couples can more easily conceal or present as a routine request for time off.

6.1. Exposing Oneself and One's Intimacy

Several participants expressed discomfort with being forced to disclose aspects of their private lives. Laurène, for example, described the discomfort of explaining her family project in a predominantly male environment where the concept of a two-mother family was unfamiliar: "It was sharing something very, very intimate with people." She referred to the "Swiss politeness" of her colleagues, glossing over possible judgments. However, this "politeness" did not prevent feelings of intrusion for Laurène, who was also forced to disclose her partner's ovulation schedule in order to negotiate time off work for ART-related travels.

Some participants preferred to inform only their immediate superior to maintain discretion, as Maude explained:

> I told my boss, but not my colleagues, because I prefer to tell them later. And then if I'm pregnant, people ask fewer questions. But in your case [directed to her partner], you were going to be a mother without being pregnant, and people don't understand.

In such situations, non-gestational parents often must justify themselves and explain their path to same-gender parenthood, resulting in an involuntary and abrupt "coming out." Léa recalled having to inform her manager and then witnessing the surprise of her colleagues when they discovered a birth announcement in the cafeteria featuring two women's names instead of a "father." This example highlights how the disclosure of a same-gender family challenges cisheteronormative representations of parenthood.

Participants also emphasized the importance of a supportive family environment, including siblings or grandparents. Parental stress is influenced by the desire to become a parent in a societal context dominated by heteronormative representations of family and parenthood.

Some participants found themselves having to explain the ART process in detail to uninformed relatives. This leads to questions about donor identity, which mother will carry the child, or the future roles of each parent—questions that would not arise in a heterosexual context.

The identity and status of the donor are sensitive issues. In several accounts, family members spontaneously referred to the donor as "the father," implicitly assigning him a parental role within a two-mother family—an assumption that participants experienced as an additional burden.

Furthermore, the need to travel abroad for ART makes the preconception process more visible. Many couples described not only having to negotiate time off with their employers but also feeling the need to justify themselves to family and friends. This dual exposure at work and in their personal circles adds to the stress already inherent in the medical process, a phenomenon characterized as minority stress (Amodeo et al., 2018; Luxion, 2020; Scandurra et al., 2019; Wheeler et al., 2018).

Some participants chose to keep their parenting projects confidential during the preconception stage to avoid potential negative reactions from family and friends. Camille explained:

> We decided not to tell our family. Justine isn't close to hers, so it wasn't even a question. As for me, I didn't want to create false hopes….They still hold prejudices like "gay people don't have families."…I didn't want to feel pressured to justify our decision to my family.

Camille's testimony aligns with studies on ROPA, which highlighted how fear of judgment leads many couples to keep their plans private (Golombok et al., 2023; Roca i Escoda, 2016). The concept of "sharing motherhood"—one mother providing the oocytes while the other carries the child—directly challenges dominant notions of kinship, which remain largely rooted in cisheteronormative frameworks. Aurore and Clarisse, for example, chose to hide that they had undergone a ROPA from Aurore's father, convinced he would not approve.

Access to ART is both a highly stratified and stratifying process (Barnes & Fledderjohann, 2020; Tam, 2021). Lesbian couples face intersecting forms of oppression, including homophobia and heterosexism (Short, 2007), as members of minority groups. ART remains shaped by heteronormative family norms, reinforcing structural barriers to access. Beyond the medical and legal dimensions, ART also raises symbolic and social issues, exposing persistent resistance to same-gender parenting and the enduring influence of traditional family models. More broadly, it reflects the weight of family norms and the challenges faced by lesbian couples, who often have to justify the legitimacy of their families. These narratives highlight how lesbian couples must navigate a double layer of exposure in professional and personal contexts as they pursue parenthood through ART. Whether negotiating with employers or responding to family expectations, participants are often compelled to disclose and defend the legitimacy of their parenting project. This dual burden of visibility and justification amplifies existing inequalities and adds emotional weight to an already demanding process. The case of ROPA exemplifies how lesbian couples challenge normative assumptions about biology and kinship. As Nordqvist (2014) argues, their parenting projects confront dominant social representations of family, highlighting the ongoing struggle for recognition among two-mother families.

7. Conclusion: A Path Fraught With Obstacles

Lesbian couples' reproductive travel is costly and imposes an additional burden on couples already facing minority stress factors (Wheeler et al., 2018). The "minority stress" they experience is closely linked to the lack of access to ART in their home country, a situation that affects their desire to become parents (Scandurra et al., 2019). The concepts of parental stress (Luxion, 2020), parenting desire, and minority stress (Amodeo et al., 2018) are especially relevant here, highlighting the risks associated with clandestine procreation in terms of health and safety (Peleg & Hartman, 2019). Couples must manage not only the medical and logistical aspects of ART but also the psychological and emotional implications of their situation (Rozental & Malmquist, 2015).

The obstacles lesbian couples face in their ART journey are not limited to medical challenges. They encompass logistical, legal, financial, and psychological difficulties, exacerbated by minority stress and clandestine situations. These combined factors profoundly impact their path to parenthood, their health, and their well-being. The medical process of ART follows a very rigorous timeline that involves repeated tests, ovulation monitoring, and the need to leave the same day as ovulation triggering. However, this temporal rigor conflicts with the mobility inherent in reproductive travel. Couples often must cross one or more countries' borders, adding the stress of distance to geographical and legal obstacles. Acting clandestinely—exacerbated by Covid-related mobility restrictions and professional constraints—further complicates this journey.

Integrating the critical perspective of reproductive travel as "reproductive exile" (Inhorn & Patrizio, 2009) further highlights the role of social inequalities and prevailing gender norms in shaping lesbian couples' ART experiences. This can be understood as a form of double discrimination based on both their sexual orientation and their relationship status, forcing them into costly "reproductive exile" in order to pursue their parenthood project. The systemic discrimination embedded in heteronormative medical and legal frameworks not only deepens social inequalities by disproportionately burdening lesbian couples financially and emotionally but also reinforces traditional gender norms by implicitly positioning heterosexual couples as the normative standard for access to ART. Such structural inequalities underscore the urgency of redefining ART access and related policies through a reproductive justice lens that can acknowledge and mitigate these gendered and social inequalities in care.

Our study shows that the experiences of lesbian couples undergoing ART abroad go beyond logistical and legal challenges. It is also shaped by microaggressions and reinforced by enduring heteronormative biases in healthcare facilities, as highlighted by previous research on LGBTQ+ patients' healthcare experiences (Kirubarajan et al., 2021). These everyday microaggressions, though often subtle, build up over time and play a significant role in the minority stress these couples experience, potentially impacting their mental health and well-being (Nadal, 2019). It is therefore essential for medical institutions to adopt a fully inclusive approach. A key lever for enhancing care equity and the experience of LGBTQ+ couples on their path to parenthood is training healthcare providers to recognize and prevent microaggressions while implementing affirming and respectful practices.

Fieldwork insights also suggest that adopting a reproductive justice approach could more effectively address lesbian couples' needs (Stacey, 2018), encouraging policymakers to raise awareness among healthcare providers about the specific legal, medical, and social vulnerabilities LGBTQ+ families face. It also emphasizes the importance of acknowledging the diverse profiles of patients seeking reproductive care. Tailoring ART protocols to better align with the specific needs and lived experiences of lesbian couples can help foster more inclusive, safer, and equitable pathways to parenthood. Collaboration with LGBTQ+ associations offers valuable insights in this regard. Further research is needed to explore how the principles of reproductive justice can concretely inform policy development and clinical practices.

The legal reform of 2022, which extended ART access to married lesbian couples in Switzerland, marks a significant shift in LGBTQ+ reproductive rights. Although this change has removed one major structural barrier, drawing on previous studies in perinatal care settings, Swiss reproductive and parenting culture remains strongly cisheteronormative (Chautems, 2022; Chautems & Maffi, 2021; Gouilhers et al., 2023).

In this context, the reform must be understood as a step toward reproductive justice, but not as its full achievement, as significant inequalities persist. Some of these inequalities also apply to other non-heteronuclear intended parents, such as single women. Future studies should investigate how this legal shift has shaped the care experiences of lesbian couples and whether it has led to meaningful improvements in their reproductive journeys or merely changed the terms under which existing inequalities are negotiated.

Acknowledgments

We are deeply grateful to the women who shared their experiences and generously gave their time. We would also like to thank Catherine Fussinger for her contribution to this research. Finally, we are thankful to the University of Lausanne for its financial support.

Funding

Publication of this article in open access was made possible through the institutional membership agreement between the University of Lausanne and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interests.

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Social Inclusion
2025 • Volume 13 • Article 10548
https://doi.org/10.17645/si.10548

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ARTICLE

Open Access Journal

Reproductive Equity Support: A Cross-National Comparison of Medically Assisted Reproduction and Abortion Policies

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Submitted: 17 April 2025 **Accepted:** 24 July 2025 **Published:** 18 September 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock); fully open access at https://doi.org/10.17645/si.i523

Abstract

This article offers a new way of classifying and measuring state support for reproductive equity across countries, focusing on medically assisted reproduction (MAR) and abortion. Drawing on the notion of stratified reproduction and comparative welfare state research, we propose a two-dimensional framework to capture how policies can shape different sets of inequalities and how access to reproductive care is provided. The two dimensions that compose our framework are "permissiveness," the degree to which government policies enable access to reproductive care by legalizing services, defining who qualifies as a patient, and/or imposing restrictive measures on service delivery, and "generosity," the extent to which government policies subsidize the costs of authorized services for individuals deemed eligible. We applied the permissiveness–generosity framework to quantitative data on MAR and abortion policies from 2020 from the International Reproduction Policy Database across 30 high-income countries. We then investigated the cases of Austria, Germany, and Switzerland, which group together in the overall plotting, more in-depth. The quantitative mapping revealed diverse approaches to reproductive equity, with some countries having both permissive and generous policies, while others focus on one dimension or provide limited support altogether. The case studies show that despite overall trends towards greater reproductive equity in recent decades, state support for individuals' equal access to MAR and abortion remains limited and has taken different pathways in this group of countries. This study contributes to a better understanding of how state policies promote equal access to reproductive care and enable individuals to pursue their desired reproductive pathways, regardless of their characteristics or socioeconomic position.

Keywords
abortion; Austria; Germany; medically assisted reproduction; reproductive equity; stratified reproduction; Switzerland; welfare state

1. Introduction

This article introduces a new way of classifying and measuring institutional contexts for reproduction, focusing on medically assisted reproduction (MAR) and abortion. Reproduction is an important area of state regulation, including contraception, abortion, assisted reproduction, and pregnancy care. States can forbid, hinder, permit, or ensure individuals' access to different reproductive healthcare services. As stratification of reproduction has been well documented in numerous studies, it is crucial to understand the mechanisms through which government policies mitigate or exacerbate inequalities in individuals' access to reproductive care.

Comparative research on reproduction policies has largely focused on a particular aspect in isolation, such as contraception, abortion, or assisted reproduction. However, it is important to investigate reproduction policy as a regulatory domain more broadly. This is not only because regulations of these different subfields often influence each other, for example, by touching on common ethical concerns among the general public (Zagel, 2024), but also because analysing them together allows us to see how government interventions shape processes of reproduction as a whole (Almeling, 2015).

There is a large diversity in how countries facilitate access to MAR and abortion. These two aspects of reproductive care have been subject to exceptionally intense political debate in many countries. When these services are legal, they are provided in a medical setting that is closely attached to general healthcare. However, compared to other less controversial reproductive services such as contraception and pregnancy care, MAR and abortion are more visibly subject to political decisions and policy choices regarding what medical care the state is obliged to provide, to what extent, in what condition, and for whom. Therefore, we take MAR and abortion as important aspects of reproduction that exemplify how states provide support for equity.

This article proceeds as follows. First, drawing on the notion of stratified reproduction and employing insights from comparative welfare state research, we build a two-dimensional framework of permissiveness and generosity to capture the institutional arrangements that shape access to MAR and abortion. We then apply this framework empirically, using data from the International Reproduction Policy Database (IRPD) on MAR and abortion policies across 30 countries. Finally, using this framework on three case studies—Austria, Germany, and Switzerland—we illustrate the divergent pathways taken by these countries in their reproductive equity support in MAR and abortion. We aim to contribute to a deeper understanding of how government policies shape reproductive equity in contemporary society.

2. Background

In this article, we propose a framework to capture multidimensional differences in reproduction policy from the perspective of what we call "reproductive equity support" in the welfare state (Zagel & Tamakoshi, 2025).

In the next section, we discuss the literature on which we build our framework: stratified reproduction and comparative welfare state research.

2.1. Stratified Reproduction

Extensive social sciences research has shown that reproduction is differentially experienced across different axes of inequalities. Many scholars investigating inequalities in reproduction use the concept of "stratified reproduction," coined by Colen (1986, 1995) and expanded by Ginsburg and Rapp (1995). The concept refers to "the power relations by which some categories of people are empowered to nurture and reproduce, while others are disempowered" (Ginsburg & Rapp, 1995, p. 3). It has been extensively used to describe and analyze the hierarchical organization of reproductive experiences among different social groups (Greil et al., 2011; Ikemoto, 2015; Lee, 2019).

Studies that build on the notion of stratified reproduction are often conducted on a single-case basis and mostly focus on inequalities observable at the meso- and micro-levels, such as hospital organizations and clinical encounters (e.g., Becker, 2022; Davis, 2019). While these studies acknowledge the impact of government policies on inequalities in the reproductive realm, institutional settings are predominantly seen as contextual factors, and are rarely the focal point of analysis. We still lack a framework for a systematic comparison across a large number of cases regarding policies that exacerbate, maintain, or mitigate the stratification of reproduction.

2.2. Welfare States

Meanwhile, comparative welfare state research has extensively examined the nexus between (state) institutions and inequalities. One of the primary objectives of these studies is to identify which policy strategies are optimal in eliminating inequality and poverty within society (e.g., universal benefits versus means-testing). However, although comparative welfare state studies have examined institutional arrangements across different policy fields, reproduction has been overlooked. Reproduction has also been omitted by large parts of feminist welfare state scholarship, which has mostly focused on policies' impact on gender inequality in paid and unpaid labor (e.g., Lewis, 1992; Sainsbury, 1997).

The study by O'Connor et al. (1999) is exceptional in this regard; it includes a chapter on reproductive rights, particularly abortion policy, with respect to systematic differences in welfare states' interventions. Comparing four liberal welfare states (Australia, Great Britain, Canada, and the United States), the authors contrast two conceptions of rights in relation to welfare states. One is the recognition of the right to abortion as a medical entitlement, the other is the right to abortion as a "body right." In the medical entitlement model, the right to abortion is conceived as part of the general right to healthcare, the needs for which are certified by a medical authority. This conception is adopted in many countries (including Australia and the UK) that have held abortion on the criminal code except for specific cases and conditions. In the medical entitlement model, welfare states support access to legal abortion as a form of medical care. It does not presume the woman's individual right to abortion and instead requires a mediation by a medical authority. Historically, this model tends to be more stable than the other model. The liberalization of abortion in countries treating abortion as a medical entitlement has usually taken place through the expansion of the specific conditions that exempt criminality.

The other type of state regulation identified by O'Connor et al. (1999) is to capture the right to abortion as a body right. In this model, access to abortion is an issue of the legal personhood of the woman, i.e., civil rights to self-determination, without a requirement of proof of a medical need. The conception of abortion rights as a body right legitimizes the service (abortion) as a commodity in a market trade. In relation to welfare states, the body right model carries a certain intricacy (O'Connor et al., 1999). On one hand, the body right claim may lead to social rights being extended to abortion, mandating the state to supplement the market and secure a minimum standard of access. On the other hand, the individualist notion of abortion rights may be pitted against the social rights of welfare state constituents in general. Furthermore, although the right to abortion as a body right aligns more with radical feminist demands, it is historically more vulnerable to anti-abortion movements that mobilize the same individualist term and claim for the rights of competing subjects, including the fetus. The study classifies the United States and Canada as cases that employed the body right frame in the period under study. In these countries, abortion became liberalized through decriminalization, instead of by broadening the definition of medically approved exceptions.

Due to their focus on abortion regulations, the relations between welfare states and reproduction suggested by O'Connor et al. (1999) may be to some extent particular to abortion. However, they are still insightful for a general analysis of reproduction policy in welfare states. Reproductive care services may be conceived of differently across country contexts and across time: as a form of medical care, as an issue of self-determination, or both. We can expect that this is reflected in whether states prohibit, discourage, allow, or facilitate access of different population groups to different reproductive techniques and services.

3. State Support for Reproductive Equity: Permissiveness and Generosity

Bringing together the perspective of stratified reproduction and the welfare state-reproduction nexus, we propose a framework to compare how welfare states support reproductive equity with reproduction policies. Mirroring the public health notion of health equity (Braveman, 2014), we define reproductive equity as a reduction of *stratification* in reproductive health. By stratification, we refer to health differences between people that are avoidable according to the current state of science and technology, but adversely affect socially and/or economically disadvantaged groups. In turn, reproductive equity is achieved when all the reproductive healthcare services of the highest standard are accessible and affordable, regardless of an individual's characteristics or position in society.

Reproductive equity is therefore a normative concept that puts a spotlight on the question of whether states not only eliminate barriers but also proactively facilitate access to reproductive healthcare services, so that all individuals can realize their reproductive intentions. This conceptual focus adds to the politics of reproduction literature covering the broader spectrum of ideas around reproduction, including ideologies that lack a health- and scientific evidence-orientation, like anti-abortionism or pronatalism. Rather than understanding reproductive equity as a policy goal, we use it as a benchmark concept for the configuration of reproduction policies in different welfare states.

Theoretically, welfare states with high reproductive equity support allow and finance all the available reproductive healthcare services, effectively enabling individuals to decide whether, when, and how to avoid, start, continue, or terminate a pregnancy. For abortion, reproductive equity support can be considered as strong when abortion is free and available upon request and without a waiting period or other

obstacles, such as conscientious objection by physicians. Reproductive equity in MAR requires that individuals and couples be allowed to access different MAR techniques at an affordable cost, regardless of their sexuality or marital status.

Other important concepts largely align with our interest but are not conducive to the analytical aim of this study. Reproductive autonomy, defined as the capacity to make unrestrained decisions associated with reproduction and access to reproductive health services free from interference or coercion (Senderowicz & Higgins, 2020; Upadhyay et al., 2014), is another normative concept that resonates with the notion of reproductive equity. It indirectly implies that states must provide an environment beyond reproduction policies that allows their citizens to make such decisions. Reproductive justice is another powerful term, used as an analytical framework as well as a movement and vision. Coined by feminists of color, it sheds light on the embeddedness of reproductive autonomy in the context of questions of broader social justice, identifying simultaneous oppressions including racism and classism (Luna & Luker, 2013). Because of the holistic vision of the concept, it requires analysis beyond our focus on policies and the welfare state.

In light of the distinction between welfare states that grant access to abortion as a medical entitlement and those that grant it as a body right (O'Connor et al., 1999), reproductive equity support is a cross-cutting concept. Any level of reproductive equity support may theoretically be based on medical entitlement or on body rights, be they defined in an inclusionary or exclusionary way. That means that the medical need vs. body right question is more about *how* welfare states provide reproductive health services, and reproductive equity support is more about *what* is provided.

To capture the institutional provisions that support reproductive equity, we composed a framework with the two dimensions of *permissiveness* and *generosity*. Permissiveness indicates the degree to which policies enable access to reproductive care by establishing who qualifies as a legitimate patient and/or what restrictions are imposed on service delivery. This dimension considers the legality of procedures and services, the presence of limitations on their provision, and whether any criteria exclude certain individuals from being classified as eligible recipients. A lack of restrictions and conditions on accessing these procedures and services can be viewed as permissive and favourable towards reproductive equity.

Generosity reflects how extensively policies provide for the costs of legalized reproductive services to be covered for those recognized as eligible recipients. Policies can promote reproductive equity by subsidizing the expenses associated with reproductive procedures and services within public health systems. Even when a specific reproductive care service is allowed by law, it might not be included in public healthcare coverage. This situation forces people to pay out of their own pockets to obtain these services, discriminating against lower-resourced individuals. Funding reproductive procedures and services enables easier access for disadvantaged socioeconomic groups, thereby promoting reproductive equity.

It is important to capture the institutional support for reproductive equity along these two distinct dimensions. A policy may be permissive without being generous—a service could be legalized, but without funding being provided for it. In this pattern, the service is legitimized as a market good but omitted from the package covered by the welfare state. Conversely, policy provision might be generous but not permissive, such as when a service is financed that can only be accessed under strict conditions. In these cases, welfare states narrowly define legal services or recipients but assure the designated recipients to the legalized services as part of the state mandate.

Our permissiveness–generosity framework adds a perspective that is distinct from existing comparative approaches analysing reproduction policy. For example, in the field of MAR, a strand of political science research has proposed a framework based on the notion of autonomy, distinguishing who is granted autonomy by the state, i.e., professionals and recipients (Bleiklie et al., 2004; Engeli, 2009; Engeli & Rothmayr Allison, 2013; Varone et al., 2006). In their framework, treatment eligibility and cost coverage are indiscriminately listed as factors to determine patients' autonomy. This blurs an important distinction between different sets of inequalities (e.g., sexuality and socioeconomic status) as well as whether welfare states conceive access to MAR as a matter of self-determination or as a right to healthcare, and for whom. In the field of abortion, most comparative studies account for changes and differences in abortion policy in terms of liberalization, measured by the breadth of grounds for legal abortion and the availability of abortion upon request (Boyle et al., 2015; Fernández, 2021; Forman-Rabinovici & Sommer, 2018). Even in those studies that consider financial aspects of abortion policy, cost coverage is merely conceptualized as one of the measures by which the state erects barriers for people to obtain abortion (Budde & Heichel, 2017). This also fails to capture the different models of how welfare states address inequalities in abortion access.

4. Reproductive Equity Support in 30 High-Income Countries in 2020

In this section, we apply our proposed two-dimensional framework to empirical data on 30 high-income countries and explore how welfare states provide reproductive equity support in the fields of MAR and abortion.

4.1. Data

We used the most recent available policy data on abortion and MAR from the novel IRPD (Zagel et al., 2025). The IRPD includes policy indicators for 33 countries from 1980–2020 in the policy fields of sex education, contraception, abortion, MAR, and pregnancy care. The database was built in the scope of the research group Varieties of Reproduction Regimes, based at the WZB Berlin Social Science Center, Germany (2022–2028), and is provided in a data archive to the scientific community. Data collection was carried out from 2022 to 2024 with a standardized online survey of policy experts. The questionnaire included measurements of carefully selected reproduction policies used in previous studies and additional indicators. Pretests were run separately for each policy field by researchers with expertise in the respective field. One expert per country filled in the questionnaire, providing data through desk research and drawing on their network. Country experts were selected from academics and reproductive rights professionals, each with extensive expertise in at least one of the policy fields.

For this article, we used data on abortion and MAR policy. Our final sample for this step of the analysis consisted of 30 countries: Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Türkiye, and the United Kingdom. We excluded the United States because of its strong subnational variation in most of the indicators we consider.

4.2. Index Building

To map reproductive equity support, we created one composite index for each of the two dimensions (permissiveness and generosity) using variables measuring abortion policy and MAR policy. This was to provide an overview of overall reproductive equity support across fields. We used eight policy indicators from the IRPD to operationalize the permissiveness dimension (four for each policy field) and four policy indicators to operationalize the generosity dimension (two for each policy field).

To measure permissiveness, we used the following four (a–d) abortion policy indicators: (a) whether abortion was available on request (1/0), (b) whether medication abortion was legal (1/0), (c) whether doctors were allowed to object to providing an abortion (0/1), and (d) whether there were mandatory waiting periods between counseling and abortion (0/1). Permissiveness in MAR policy was operationalized with three (i–iii) indicators that indicated whether the following treatment methods were legal for (i) different-sex couples, (ii) lesbian couples, and (iii) single women (each 1/0): intra-uterine insemination—a procedure to place laboratory-processed sperm in the uterus with the use of donor semen (IUI-D) and in vitro fertilization (IVF)—a sequence of procedures to fertilize gametes extracorporeally alongside intracytoplasmic sperm injection (ICSI)—a procedure to directly inject a single sperm into the cytoplasm of an egg. For each of the patient groups, we assigned 1 if at least one of the two methods (IUI-D and IVF/ICSI) was legal, and in the case of IVF/ICSI, if at least one of the gamete configurations (own/donated) was legal. A fourth MAR indicator (iv) that we included in the permissiveness index was whether surrogacy (any arrangement) was legal (1/0).

In the generosity index, we included two indicators of abortion policy: whether costs for an abortion were *covered fully*, *partially*, or *not at all* (1/.5/0), and whether costs for post-abortion care were *covered fully*, *partially*, or *not at all* (1/.5/0). MAR policy was also measured with two indicators in the generosity index: whether costs for MAR treatments were *covered fully*, *partially*, or *not at all* (1/.5/0), and the number of cycles that were covered at least partially (count).

To build the index, we first coded each individual indicator so that a higher value was in the direction of more permissiveness and generosity, respectively; the higher the value, the higher the support for reproductive equity. For example, we coded countries as 0 which allowed doctors to object to performing an abortion on a patient. Our coding shows variation in support for reproductive equity, but does not allow us to conclude how restrictive countries are, which previous studies have considered as the opposite end of permissiveness. In our data, the coding of 0 cannot be interpreted as restrictiveness, since it can include regulations with other implications, such as when there was no national regulation at all or the indicator was not applicable. One example of when we coded an indicator as 0 with a *not applicable* meaning was cost coverage of MAR treatments in countries where MAR was not permitted.

Next, we standardized the indicators that were not measured as 0/1 to have comparative measures. We follow earlier examples in comparative policy research (e.g., Gornick & Meyers, 2003) and standardized by dividing the values by the observed maximum. Finally, we created additive indices for permissiveness and generosity. To give equal weight to each policy field, we applied an equal weighting strategy (x*0.5). Equal weighting is applied in index building when all the indicators included in the measure are considered equally important or when no evidence supports a different scheme (Gan et al., 2017). Since there was no evidence that any of the indicators for abortion and MAR respectively should receive a higher weight in the unchartered field

of comparative reproduction policy indexing, equal weighting appeared to be the apt strategy. With this, the theoretical range of the permissiveness index is 0–4, and for generosity index it is 0–2.

4.3. Results

Table 1 shows descriptive statistics for the two composite indices of permissiveness and generosity. Our weighted permissiveness index has an empirical range from 1 for Italy, France, and Poland to 3.5 for Sweden and Australia in 2020 (mean 2.21). Generosity ranges from 0 for Canada, Japan, and Australia to 1.75 for Belgium (mean .84) in that year.

Table 1. Descriptive statistics for policy indices.

	Permissiveness	Generosity
Mean	2.21	0.84
SD	0.67	0.47
Min	1	0
Max	3.5	1.75

Figure 1 shows the countries' 2020 index scores in the two-dimensional space of permissiveness and generosity. Countries vary widely on our measures, reflecting a broad range of approaches to reproductive

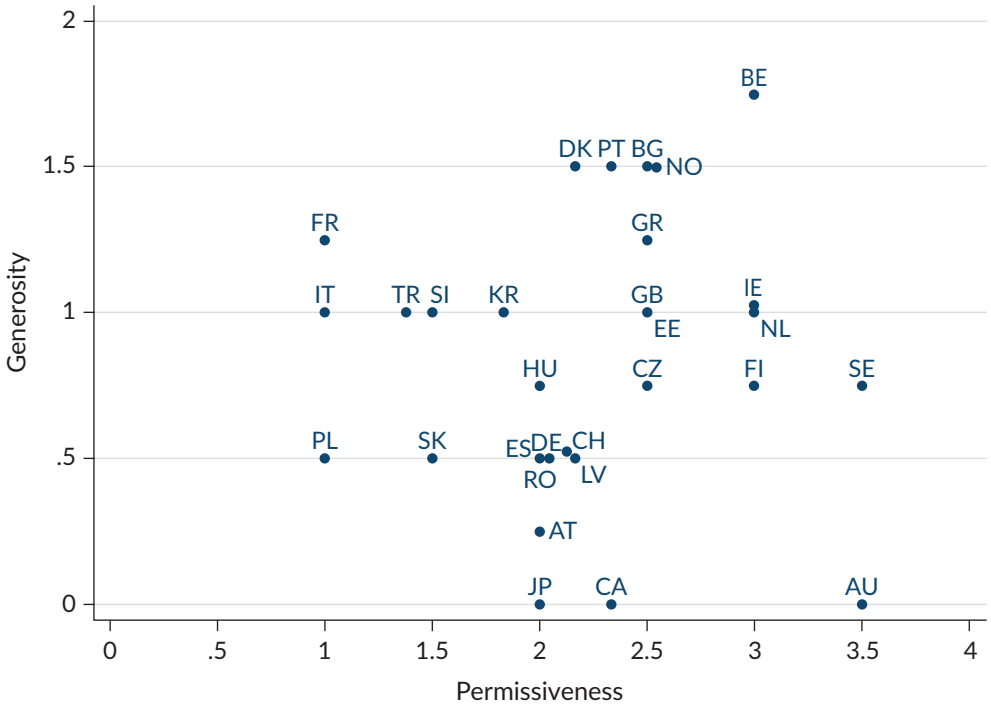

Figure 1. Reproductive equity support by generosity and permissiveness across countries, 2020. Source: IRPD v1.0.0 data (Zagel et al., 2025). Notes: AU: Australia; AT: Austria; BE: Belgium; BG: Bulgaria; CA: Canada; CZ: Czech Republic; DK: Denmark; EE: Estonia; FI: Finland; FR: France; DE: Germany; GR: Greece; HU: Hungary, IE: Ireland; IT: Italy; JP: Japan; LV: Latvia; NL: the Netherlands; NO: Norway; PL: Poland; PT: Portugal; RO: Romania; SK: Slovakia; SI: Slovenia; KR: South Korea; ES: Spain; SE: Sweden; CH: Switzerland; TR: Türkiye; GB: the United Kingdom.

equity support in abortion and MAR. Australia sticks out as particularly permissive and particularly low on generosity from the central government. Japan and Canada are on a par with Australia in terms of generosity, but have lower levels of permissiveness. Belgium, Bulgaria, Denmark, Norway, Greece, and Portugal score high on both dimensions. By contrast, Poland scores low on both dimensions, in line with recent research on the dire situation for reproductive rights in Poland (Kaminska, 2024). Italy and France have similarly low levels of permissiveness as Poland, but score higher on generosity. Among the countries with a level of generosity similar to Poland but somewhat higher permissiveness are the three German-speaking countries of Austria, Germany, and Switzerland, as well as Latvia, Slovakia, Romania, and Spain.

5. Reproductive Equity Support in Austria, Germany, and Switzerland

In this section, we extend our comparative analysis of reproductive equity support with a case-study approach, focusing on Austria, Germany, and Switzerland. The analysis draws on the two dimensions of permissiveness and generosity and focuses on important changes in MAR and abortion regulations in recent decades. The aim is to better understand the countries' positions in the range of reproductive equity support models (answering *what* is provided) while also considering the distinction between medical entitlement and body right approaches proposed by O'Connor et al. (1999; addressing *how* rights are provided for).

In mainstream comparative welfare state research, Germany and Austria have predominantly been categorized as conservative welfare states, characterized by an intermediate level of decommodification of labour and a high level of stratification (for a systematic review, see Ferragina & Seeleib-Kaiser, 2011), not least in terms of gender inequalities in paid and unpaid work (Leitner, 2010). Switzerland is often deemed as an outlier in that literature, with direct democracy and federalism significantly impacting the development of the Swiss welfare system (Obinger, 1998).

Regarding reproduction policy, the three countries share the common pathway of having introduced rather restrictive MAR policies in the 1990s. These reforms seemed to have been influenced by the radical feminist discourses at the time that viewed assisted reproductive technologies as tools for further exploitation of the female body by patriarchal science (Engeli & Rothmayr Allison, 2016). These policies banned various techniques associated with MAR from medical practice and privileged married heterosexual couples. However, there have been important regulatory changes in the past decade. In contrast to MAR policy, the three countries have experienced different trajectories in abortion policy, such as in how abortion upon request has become available at different times in the three countries.

5.1. Austria

In Austria, state support for reproductive equity has taken diverging pathways in the fields of MAR and abortion. Austrian MAR policy used to be one of the most restrictive in Western Europe, when legislative control of the domain began with the passage of the Reproductive Medicine Act in 1992 (*Fortpflanzungsmedizingesetz: FMedG*). However, it became significantly more permissive through a reform in 2015 (*Fortpflanzungsmedizinrechts-Änderungsgesetz 2015: FMedRÄG 2015*). The revision legalized certain MAR techniques that were previously prohibited. These include the use of donated sperm for IVF, which used to be only allowed for intra-uterine insemination (IUI), and the use of donated oocyte. This amendment opened up treatment options for those who cannot use their own gametes. It also expanded the patient

definition and included female same-sex couples, although MAR access for single women and male same-sex couples, via surrogacy prohibition, has remained illegal. In terms of generosity, the Austrian state started financing MAR costs under the IVF Fund Act in 2000. Under this law, patients receive reimbursement for 70% of the costs for IVF treatments for a maximum of four cycles. This also applies to the patient groups that were newly added in the 2015 reform.

Meanwhile, Austria has had a permissive abortion policy since the 1970s, based on the framing of abortion as a woman's liberation, though with a low level of generosity. Abortion has been legal upon request within the first trimester of pregnancy since 1975. The Austrian Social Democratic Party, advocating for a reform of the restrictive 19th-century law since the 1920s, had linked the issue of abortion to class struggle; abortion restrictions only negatively affected poorer women who, unlike their affluent counterparts, could not afford to find a legal loophole or other ways to access abortion (Köpl, 2001). However, in the wake of the second-wave feminist movement in Europe and the formation of autonomous feminist groups during the 1970s, women's groups within the Austrian Social Democratic Party and other established institutions incorporated the radical feminists' frame of abortion as an issue of women's self-determination and emancipation (Griessler & Hadolt, 2006). Although abortion remained on the criminal code, it became available upon request; Austria was the second country in Western Europe after Denmark, and the first Catholic country to introduce an upon-request model (Knill et al., 2014). The parliamentary discussions led to this reform, framing abortion as an issue of women's individual rights and liberation. This framing was largely kept in subsequent parliamentary and governmental discussions. When the abortion medication Mifegyne was authorized in 1998, most Austrian parties viewed it as an extension of a woman's right to decide about their own pregnancy (Köpl, 2001). Meanwhile, reproductive equity support is limited in its generosity. The costs for abortion (whether surgical or by medication) and abortion-related care have never been covered in Austria.

In summary, Austrian reproductive equity support has taken two diverging paths in the fields of MAR and abortion. The MAR regulation was transformed from a restrictive *but* generous policy to a permissive *and* generous one. Once defined as lawful, MAR treatments have consistently been financed and the range of treatments and patients deemed legitimate has expanded in the last decade. In contrast, Austrian abortion policy has always been permissive *but* not generous; abortion became available upon request in the 1970s while incorporating a radical feminist perspective, yet the policy lacks generosity as individuals are responsible for bearing the costs associated with abortion.

5.2. Germany

German reproductive equity support has shown a modest increase in permissiveness while remaining low or declining in terms of generosity in MAR and abortion. Since the first legislation addressing MAR (*Embryonenschutzgesetz: EschG*) in 1990, certain techniques (including egg donation) have been prohibited and remain so until today, though the patient definition has broadened. The official physician guidelines, binding for all practitioners, used to limit MAR access to married different-sex couples and, in exceptional cases, unmarried different-sex couples in a stable relationship (Bundesärztekammer, 1994). This restriction was lifted when the guidelines were updated in 2018, effectively opening up MAR for lesbian couples and single individuals. Male same-sex couples remained excluded through a total ban on surrogacy. The generosity of MAR policy was partially decreased in 2004 due to a general reform of the German

healthcare system. Up to 2003, statutory health insurance funds fully covered all expenses for ART, including doctor visits and the prescribed medications required for conception and a successful pregnancy. In 2004, the Act to Modernize Statutory Health Insurance (*GKV-Modernisierungsgesetz: GMG*) introduced a limit of three cycles and established age restrictions (40 years for women) for accessing IVF under statutory health insurance. Patients were also required to contribute 50% of the associated costs through a co-payment system (Hilland, 2011).

For abortion, the German federal government provides little reproductive equity support, both in terms of permissiveness and generosity. Since 1993, abortion has been available on demand within the first 12 weeks of pregnancy in Germany. However, it remains regulated in the criminal code (*Strafgesetzbuch:StGB*), with conditions that the person seeking abortion must undergo mandatory counseling at least three days prior to the abortion. This requirement also applies to medication abortion, which became available in 1999 in Germany following the authorization of Mifegyne by the European Union (Hemmerling et al., 2005). Regarding generosity, abortion costs and costs related to post-abortion care are never covered, except for medical and criminological exceptions. This shows that abortion is not considered part of the healthcare package that the welfare state is obliged to provide unless medically or criminologically certified.

In summary, German reproductive equity support has increased to a limited extent in permissiveness and remained low or decreased in generosity. The patient definition for MAR was expanded in 2018, but many techniques remain prohibited, including egg donation. Permissiveness of abortion increased in 1993 via legalization of abortion upon request, with dissuasive measures introduced. In terms of generosity, the cost coverage of MAR has decreased, while abortion upon request has never been financed.

5.3. Switzerland

In Switzerland, state support for reproductive equity has been considerably restricted for MAR, while it has increased for abortion. State equity support of MAR is extremely limited both in terms of permissiveness and generosity. The first federal legislation of MAR, the Reproductive Medicine Act (*Fortpflanzungsmedizingesetz: FMedG*), was passed in 1998 and came into force in 2001 (Rothmayr & Serdült, 2004). The law has not significantly changed until today, except for a revision in 2017, which authorized pre-implantation genetic diagnosis. Under the law, sperm donation is allowed only for married couples and egg donation is entirely prohibited. By confining MAR involving sperm donation to married couples, the law automatically excluded lesbian couples until same-sex marriage was legalized in 2022, and single women altogether. Gay men are also excluded from the MAR through the surrogacy ban; unlike other techniques, this has been stipulated in the Federal Constitution since 1992. The Reproductive Medicine Act also imposes restrictive measures on the process of accessing legal procedures. In contrast to other countries, it mandates a counseling and reflection period of four weeks for the couple between the initial counseling with a physician and the actual treatment. There is little reproductive equity support in terms of generosity. Public healthcare barely covers any expenses for MAR treatments, regardless of an individual's characteristics or medical diagnosis of infertility.

Swiss reproductive equity support for abortion was low but has widened over time. Abortion became illegal under the Swiss Penal Code in 1942, except for medical reasons certified by two doctors (Rey, 1994). The law was revised in 2002, with abortion becoming effectively available upon request within the first

twelve weeks of pregnancy. Although it is stipulated that the person must be in a state of distress, the definition of that state is up to the individual who requests an abortion. There have been a series of attempts to decriminalize abortion since the early 1970s, but the deep political divide in public opinion as well as in parliament has led to non-decisions for more than three decades (Engeli, 2009). Despite the relatively late increase in permissiveness, abortion costs have always been covered by compulsory health insurance, both before and after liberalization in 2002 (Engeli & Varone, 2012; Rey, 1994). This is perhaps because abortion had long been available only within the medical framework, instead of as an issue of women's body rights, as in the Austrian and German cases. Indeed, the medical entitlement framing was not entirely eliminated by the 2002 amendment, which demanded the person be in a "state of distress" to obtain an abortion. The long-standing medical framework over three decades and failures to decriminalize abortion may have paradoxically led to the cost coverage of abortion as a norm.

In summary, Swiss state support for reproductive equity has been significantly limited in MAR but has increased in abortion. Since MAR was first legislated for, the policy has shown low degrees of both permissiveness and generosity. Meanwhile, the regulation of abortion has changed from a restrictive *but* generous policy to a permissive *and* generous one since the liberalization in 2002, maintaining a medical entitlement framework.

6. Conclusion

This article provides a comprehensive framework to classify and measure state support for reproductive equity across countries. We focused on MAR and abortion as two subjects of intense political controversy. By integrating the conceptual perspectives of stratified reproduction and comparative welfare state research, we propose a two-dimensional framework to capture how policies can shape different sets of inequalities as well as how access to reproductive care is conceived of in these policies. The first dimension of permissiveness reflects the degree to which policies enable access to reproductive care by legalizing services, defining who qualifies as a patient, and/or refraining from imposing restrictive measures on service delivery. The second dimension of generosity measures the extent to which policies subsidize the costs of authorized services for individuals deemed eligible recipients. The empirical application of this framework across 30 high-income countries, as well as case studies from Austria, Germany, and Switzerland, highlights the diverse ways in which state policies either mitigate or exacerbate inequalities in reproductive care access.

Two main take-aways emerge from mapping a broad range of countries on permissiveness and generosity in reproductive equity support of abortion and MAR. First, countries vary widely in the way they support reproductive equity in abortion and MAR, with few countries providing permissive and generous support and many others putting a focus on either permissiveness or generosity. A number of countries provide limited support in both dimensions. Second, there is some overlap with mainstream welfare state model typologies' groupings of countries, but overall, divergence is the more obvious pattern. For example, while the Nordic European countries are commonly classified as universal and comprehensive welfare systems attuned to moderating inequalities, Finland and Sweden score intermediate on our generosity measure. Among the countries that are categorized as conservative continental European in other typologies, only Austria and Germany group together in our analysis, while countries such as France, the Netherlands, and Belgium are scattered.

We focused on the three German-speaking countries that cluster together in our overall mapping for a more in-depth analysis of the two regulatory fields of abortion and MAR. The comparison of the three cases reveals that while countries have enhanced reproductive equity by increasing permissiveness or generosity in recent decades, state support for individuals' equal access to MAR and abortion remains limited and has taken different pathways for this group. Austria shows a dual approach, where MAR policies have become more permissive and generous, contrasting with abortion policies that have long been permissive but not generous. Germany shows a modest increase in permissiveness regarding MAR but continues to impose restrictive measures on abortion access and provides no financing. Switzerland presents a configuration of contrasting approaches to the two fields, with little equity support for MAR while maintaining greater access to abortion by framing it as a form of medical care.

This study has limitations and potential room for further research. Our analysis of reproductive equity support across 30 countries employs composite indices; as we demonstrated in the in-depth analysis of three German-speaking countries, further studies could assess reproductive equity support in a disaggregated manner by looking into individual reproductive fields to explore convergence and contradictions in light of reproductive equity within a country. Furthermore, both of our empirical analyses are limited to abortion and MAR. Our two-dimensional framework of permissiveness and generosity could be extended to cover other domains of reproduction policy, such as contraception and pregnancy care.

This article takes a novel perspective on how different countries regulate reproduction. By analysing state interventions in different aspects of reproductive care, we were able to investigate how state policies shape reproductive processes as a whole. Our proposed permissiveness–generosity framework enables us to distinguish the implications for the different sets of inequalities that policies may shape, as well as how access to different reproductive care services is conceived of in relation to welfare provision. The case-based analysis supplements the more broad-brush multi-country analysis by carving out the different policy trajectories that otherwise similar countries have taken in their reproductive equity support. Such cross-country comparisons are useful for understanding and informing how state policies support equal access to reproductive care and ultimately allow individuals to achieve the reproductive pathways they desire, regardless of their characteristics or socioeconomic positions.

Acknowledgments

We would like to thank all country and field experts who helped with the development of the questionnaire and the collection of the quantitative policy data. Without their expert input, the International Reproduction Policy Database would not have been possible. We would also like to thank Denys Pikus, Carlotta Mayer, and Megan Stewart for excellent student research assistance.

Funding

This article is an output from the research group Varieties of Reproduction Regimes, funded by Deutsche Forschungsgemeinschaft (DFG, German Research Foundation), grant no. 461709920.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

Zagel, H., Khan, R., Kluge, A., Tamakoshi, M., Pikus, D., Mayer, C., & Gädecke, M. (2025). *International reproduction policy database (IRPD) (version 1.0.0)* [Data set]. WZB Berlin Social Science Center. https://doi.org/10.7802/2623

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Social Inclusion
2025 • Volume 13 • Article 10427
https://doi.org/10.17645/si.10427

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Open Access Journal

Egg Donation in Germany: The Legal System's Approach to Women's Reproductive Autonomy

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Submitted: 29 March 2025 **Accepted:** 16 July 2025 **Published:** 28 August 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Currently, egg donation is banned in Germany and punishable by law. This criminal ban infringes on the autonomy of egg donors and egg recipients, particularly affecting women or other people who were assigned female at birth in their reproductive freedoms. Furthermore, this results in the regulation and control of female reproduction to a greater extent than male reproduction. In doing so, it manifests an outdated view of women and family that no longer reflects reality. When a woman offers up her body to fulfill someone else's desire for children, it raises fundamental questions about parenthood, child welfare, exploitation, and self-determination. While the commodification and abuse of women is criticized, there are also calls to respect women's freedom to decide about their own bodies. A feminist and intersectional discussion is necessary to examine all aspects from different perspectives. The focus should be on the importance of reproductive self-determination, which includes the right to freely decide whether and under what conditions to have children and the right to freely decide to support others in their desire to have children. However, this self-determination cannot be considered separately from social and economic inequalities, which must also be addressed. The article will focus on Germany and German legislation. It will conclude that criminal law is the ultima ratio, that the protection of the affected rights of the egg donor or the child does not require a criminal ban and that other regulations are conceivable and sufficient to prevent exploitation and abuse; there is no reason to deny a woman autonomy over her own body. The current regulations reduce the affected women to a state of vulnerability.

Keywords

autonomy; best interests of the child; criminal ban; egg donation; German legalisation; infertility; medically assisted reproduction; perception of women; reproductive failure; split motherhood

1. Introduction

In Germany, about every tenth couple between 25 and 59 years is involuntary childless (German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth [BMFSFJ], 2023). Nevertheless, involuntary childlessness has long been a social and political taboo topic. This article deals with egg donation, whereby a person's unfertilized egg is transferred to another person, who carries the egg after fertilization. This primarily and significantly concerns women, although other individuals with a uterus and eggs are also affected.

The text begins by outlining the relevant statutory regulations in Germany, followed by an exploration of the underlying legislative rationale. It then compares this approach with other legal systems and analyzes the constitutional and international law context, showing that, in terms of comparative practices and fundamental rights frameworks, the strict ban on egg donation is not only unnecessary for the protection of individuals, but also conflicts with key principles such as proportionality and practical concordance—principles that ensure a fair balance between different rights and interests. Finally, a proposal for a reform is presented.

Medically assisted reproduction raises fundamental questions about parenthood, child welfare, social inequality, and self-determination, and is highly controversial both legally and ethically. Furthermore, the possibility of the selection of egg and sperm donors based on external traits and health factors (Heller & Salzman, 2021) engenders ethical concerns about the decisions being made (Perler, 2022, pp. 42–46). These challenges are part of a broader issue within a highly commercialized and globalized field of reproductive medicine; they are not limited to egg donation alone. Specifically, regarding egg donation, the argument that it promotes the objectification and abuse of women must be weighed against the counterargument that the autonomy of women over their own bodies must be respected as an aspect of reproductive freedom, and that framing women solely as vulnerable contributes to their oppression (Bujard & Thorn, 2018; Heyder, 2023, pp. 2–4, 204; Kieslinger & Schlögl-Flierl, 2023).

In Europe, egg donation is regulated in various ways across different countries. For instance, it is largely permitted in Spain and Belgium. It is completely banned, however, in Germany, Switzerland, Bosnia and Herzegovina, and Turkey.

Voluntary egg donation can take three forms: First, egg donation can facilitate another person or couple starting a family. Aside from a few cases where eggs are donated to friends or family members, questions arise regarding compensation and protection against potential exploitation. However, egg donation can also be part of a shared family-building project, for example, in the case of a lesbian couple (so-called reciprocal egg donation). In such a case, the person who donates her egg to her partner, who will carry the child, would like to share parental responsibility after the birth of the child. This option allows both partners to be biological parents of the child. Exploitation is unlikely. A third possibility involves a person who had her eggs cryopreserved for a future family-building project (so-called social freezing), but no longer needs them and wishes to make them available to others seeking to have children (so-called egg sharing). The reasons for this decision are multifaceted and may include the completion of family planning or a desire to avoid continued storage fees. In this case, egg donation poses no medical risks to the donor (anymore), and exploitation is not a concern. Instead, it can prevent the unnecessary disposal of unused eggs (Sanders et al., 2024, p. 266).

Reproductive justice has three primary values: (a) the right not to have a child; (b) the right to have a child; and (c) the right to parent children in safe and healthy environments (Bredler & Chiofalo, 2023, pp. 6–8; Lembke, 2024, p. 14; Ross & Solinger, 2017, p. 65). In addition, reproductive justice demands sexual autonomy and gender freedom for every human being (Ross & Solinger, 2017, p. 65). The problem lies not in defining reproductive justice, but in achieving it: The legal consideration of egg donation requires a nuanced and intersectional discussion (Ross & Solinger, 2017, pp. 12–17, 54–57, 73–78, 169), especially given the complex ethical dilemmas involved. Unsurprisingly, reproductive medicine has been a source of ongoing debate for many years. On one hand, there is a strong emphasis on a woman's right to make decisions regarding her body, which includes the possibility of donating eggs—whether it is done without remuneration, for reimbursement, or in exchange for financial compensation. As a form of reproductive medical assistance, comparable to sperm donation, which is a widely accepted option for infertile men, egg donation can enable women who cannot conceive with their own eggs to pursue parenthood. On the other hand, there are valid concerns about the commercialization of the female body and the exploitation of women's reproductive capacities.

2. German Legislation

The donation of eggs is prohibited in Germany and is punishable by up to three years of imprisonment or a fine: Article *1*(1) no. 1 of the Embryo Protection Act (ESchG) forbids the transfer of an unfertilized egg to another woman. Article *1*(1) no. 2 of the ESchG criminalizes the use of artificial insemination for any purpose other than achieving a pregnancy of the woman from whom the fertilized egg originates. However, neither the egg donor nor the recipient is criminally liable; it is the medical personnel involved who can be prosecuted. Even the preparatory consultation in a German fertility center can constitute aiding and abetting a criminal act abroad. The persons donating or receiving the eggs are excluded from liability under Article *1*(3) of the ESchG.

According to the explanatory memorandum of the law, the German legislator prohibited egg donation in the Embryo Protection Act in order to avoid "split motherhood"—the child's genetic mother and birth mother being different people—which was considered a violation of the child's dignity (German Bundestag, 1989, p. 6). According to the legislative rationale, the provision also aims to prevent surrogacy (German Bundestag, 1996, pp. 7–9; Hillgruber, 2020, p. 14). The primary purpose of Article *1*(1) no. 1 and 2 of the ESchG, introduced in 1990, was to avoid the "psychological harm and welfare risks associated with split motherhood" (German Bundestag, 1989, pp. 7–9). The interests of the donor and recipient were only considered insofar as their actions might impact the child's well-being. It was feared that the donor could seek involvement in the child's life in cases of her own infertility, potentially causing significant mental conflicts for the child (German Bundestag, 1989, p. 7). The concern was that a child whose existence results from the involvement of three distinct parental figures (genetic, gestational, social) would face significant challenges in forming their own identity. The legislator had no scientific evidence to support this thesis; indeed, it is referred to in the legislative rationale itself merely as an "assumption" (German Bundestag, 1989, p. 7). More recent studies on children conceived through egg donation and their parents completely refute this concern (German Federal Ministry of Health [BMG], 2024, p. 446; Leopoldina & Union of the German Academies of Sciences and Humanities, 2019, p. 70; Thorn, 2022, p. 135).

3. The German Legislation's Underlying Image of Women

The assumption that a child's identity formation is hindered when conceived using an egg from someone other than the gestational mother is not supported by empirical evidence. The existing psychological and social research does not support the legislator's assumption about a significant negative impact of "split motherhood" on child welfare. Studies on children conceived through egg donation have shown no direct harm to their well-being, and the first longitudinal study initiated in the 1990s (Golombok et al., 2023, p. 1061) found no negative impact on child development due to the lack of a genetic connection between the recipient (the social and legal mother) and the child (Golombok et al., 2023, p. 1069; Ilioi et al., 2017, p. 319; Kindler et al., 2017, p. 932; Söderström-Anttila et al., 2001, p. 195). The findings suggest that the socio-emotional situation of the children is largely unremarkable, as are the parent-child relationship and the psychological health of the parents. The children's psychological well-being and family relationships also appear to be unaffected. Additionally, recent psychological and social research has shown that early, informed, and transparent communication about conception using assisted reproductive technologies is crucial for family dynamics and child development (Kindler et al., 2017, pp. 932–934; Thorn, 2013, p. 22). Open communication about the method of conception can prevent psychological issues and even improve bonding between children and parents (Casey et al., 2013, p. 858).

Although the existing studies involve only a few cohorts of limited size and further research is needed, the available findings clearly indicate that, from a psychosocial perspective, egg donation is largely unproblematic for a child's well-being. However, more research is needed on the long-term development of individuals conceived via egg donation, especially during adolescence and adulthood.

The legislator's assumption that the egg donor will later want to take on a mother role for the child born from her egg is also scientifically unsubstantiated. On the contrary, studies show that donors who help strangers fulfill their desire to have children do not regret this later (Jadva et al., 2015, p. 373). One of the largest quantitative surveys of egg donors on medical and psychological experiences and satisfaction, conducted on average 11.2 years after donation, found that 99% of respondents were satisfied with their decision to donate and 95% would recommend egg donation to others. Only four individuals regretted donating, although 7% reported wanting more support before the donation and 14% after the donation (BMG, 2024, p. 367; Söderström-Anttila et al., 2016, pp. 260–276). The insinuation in the explanatory memorandum constructs an image of women whose sole purpose in life is motherhood and the formation of a family. In addition, it supports a biological-naturalistic view (S. Klein, 2023, p. 179) of family and parenthood (Ross & Solinger, 2017, p. 184), which has already been challenged as one-sided and outdated in related disciplines (Pryor, 2008, pp. 345–368; Walper, 2018, p. 146). Finally, it is unclear why, according to the legislator, "split motherhood" should pose a problem for the child and the genetic mother, while "split fatherhood" for the child and the genetic father in the case of sperm donation is not attributed the same significance (von Scheliha, 2025, p. 65; Wapler, 2023, Art. 1 I, para. 137).

The German regulation of assisted reproductive technology aligns with an overarching trend in which the law, in its regulation of gender and gender roles, predominantly draws upon traditional conceptions of masculinity and femininity. In doing so, legal categorizations and, by extension, legal frameworks tend to reproduce structures of hierarchy and power rather than dismantling them (Holzleithner, 2014, pp. 104–108; Rössler, 2018, pp. 109–114; Valentiner, 2022, p. 1095; see also German Federal

Constitutional Court [BVerfG], 1992a). The problem of legislation reinforcing traditional gender roles by defining autonomy in a way that ignores social dependencies and gender inequalities arises from three key points: Autonomy is often conceptualized as "negative freedom," allowing individuals to act independently without considering their relationships or dependencies, a view based on the ideal of an independent adult male. This narrow concept of autonomy marginalizes women's dependencies and caregiving responsibilities, perpetuating a historical patriarchal continuity, assuming women's subordination. This aforementioned concept is closely related to those of freedom and equality (Baer & Sacksofsky, 2018, p. 17). A new conceptualization of freedom, autonomy, and equality is needed—one that includes relational, material, and intersectional dimensions and promotes an emancipatory legal framework. If the law is concerned with acknowledging the equal freedom of all and establishing the appropriate conditions for its realization, it requires sensitivity to the actual conditions and circumstances. It is only when adequate life opportunities exist and are perceptible that autonomy can be realized effectively (Friedman, 2000, pp. 217–220; Rössler, 2002, p. 144; Ross & Solinger, 2017, pp. 16, 54). A fundamental responsibility of the law is to assess constellations and circumstances to ascertain the existence of a framework for the development of individual potential and the exercise of personal freedom. In this process, both structural and individual challenges arising from stereotypical demands must be taken seriously (Holzleithner, 2015, p. 480). If the objective of legal regulation is to guarantee freedom and self-determination, a gender-theory-informed analysis and a critical examination of affected interests are necessary in order to uncover and overcome the implicit notions of gender and gender roles (Friedman, 2000, p. 219, 2003, pp. 14–15, 19; Rössler, 2002, pp. 144, 146–149).

4. Comparison of Legal Systems

The legal situation regarding egg donation in Europe is multifaceted (BMG, 2024, pp. 349–350, 388–397; Deutscher Juristinnenbund [djb], 2024, p. 10). The most recent available data on egg donation in Europe comes from the European Society of Human Reproduction and Embryology's (ESHRE) 25th annual report, which analyzed treatment cycles for the year 2021 (Smeenk et al., 2024). According to this report, a total of 79,510 egg donation cycles were carried out in 37 European countries. This represents an increase compared to previous years and reflects the growing importance and widespread use of this method in assisted reproduction across Europe.

While egg donation holds promise for women and others seeking to have children, it often occurs within a context marked by social and economic inequality. Typically, wealthier, older individuals benefit from the eggs of younger women, many of whom are in financially unstable situations. Reproductive medicine is increasingly operating within a global market (Herb & Wenner, 2023; Perler, 2022, pp. 37–39), with fertility clinics marketing their services not only online but also at fertility centers in countries where egg donations are prohibited. People with a desire to have children in these countries therefore travel abroad to undergo fertility treatments or to gain easier access to such procedures. This phenomenon, which is also derogatorily referred to as "reproductive tourism," is highly problematic because it creates legal and ethical gray areas and exacerbates inequalities due to the differences in legal systems. However, the primary focus of this section is not to explore these issues in depth; rather, the aim is to examine foreign legal frameworks as sources of inspiration for the development of a legal regulation in Germany. The overarching objective of this transnational examination is to eliminate the aforementioned gray areas and inequalities that emerge from the interplay of divergent national regulations and the realities of free movement and increasing

cross-border mobility. Comparative law is an essential tool for developing one's own reform ideas, as it helps understand different legal approaches and their impacts. The comparison of national regulation with other systems can lead to the discovery of innovative solutions and valuable insights from the mistakes and challenges faced by other countries. This not only enhances the understanding of the domestic legal system but also reveals what changes are possible within domestic legislation and what potential societal impacts they may have. Such comparisons allow for informed decision-making and help identify potential risks as well as opportunities before making profound changes to the law.

In many countries, including nearly all EU member states, egg donation is legal under certain conditions—see the map of accessibility of infertility treatment across Europe provided by the ESHRE and Fertility Europe (2022). In all of these countries, comprehensive medical counseling is provided to all parties involved regarding the risks, success rates, and legal conditions of egg donation. The practice is banned in only a few places, such as Switzerland and Germany. However, the Swiss Federal Council decided on January 29, 2025, to revise the Reproductive Medicine Law and allow egg donation (Federal Council of Switzerland, 2025).

In some countries, such as Ukraine (Ministry of Health of Ukraine, 1992, 2002, 2013), Russia (kinderwunsch-im-ausland.de, n.d.), and Greece (see the Greek Civil Code and Nómos 3305/2005: Government of Greece, 1940, 2005, respectively), only heterosexual couples are allowed to access egg donation services, while in others, such as Denmark, single women or even queer couples may also be eligible (Danish Ministry of the Interior and Health, 2024). In Slovenia (Doljak, 2022) and Greece, a medical indication, such as infertility, is a requirement for access to egg donation. In Norway, the child must have a genetic connection to at least one parent; simultaneous egg and sperm donation or the donation of fertilized eggs is not permitted (Government of Norway, 2003).

In most countries, the age limit for egg donors is 35 years (Denmark, Norway, UK, Greece, Russia; see Government of Greece, 2005; Government of Norway, 2003; Government UK, 1990, 2008; Human Fertilisation and Embryology Authority, 2023; Ministry of the Interior and Health, 2024; kinderwunsch-im-ausland.de, n.d.) or 34 years (Czech Republic), while in Austria, it is capped at 30 (Fortpflanzungsmedizingesetz, 2002), and in France at 37 (Government of France, 1953). When it comes to the recipient, some countries impose no age limit at all (UK, Russia, Spain; see, e.g., Government of Spain, 2006, 2014), while others set varying thresholds. In Denmark and Austria, the limit is 45, in Norway, it is 46, in the Czech Republic, it is 48, and in Greece, it is as high as 49.

In Spain, the Czech Republic, Russia, Ukraine, France, and Slovenia, egg donors are required to remain anonymous, with the disclosure of their identity carrying legal consequences in Spain and Greece. However, in countries like the UK and Austria, the donor's information must be recorded, and the child conceived through donation is entitled to access information about the donor once they reach a certain age.

Most countries only allow altruistic egg donation, where compensation is provided to cover expenses incurred during the donation process. In Denmark, donors can receive up to 4,400 DKK (approximately 589 EUR), with the potential for additional reimbursement in cases of extraordinary transport costs or lost income. In the UK, the maximum compensation for egg donors is set at £985 (approximately 820 EUR) per cycle, and higher costs can only be reimbursed if they are deemed reasonable, exclude lost income, and are directly related to the donation process within the UK. In Greece, compensation is determined on a case-by-case basis by the

relevant authorities. In the Czech Republic, Russia, and Ukraine, commercial egg donation, including the sale of eggs, is permitted. However, in Austria, any compensation for egg donation is strictly prohibited.

5. Rights and Legal Interests at Stake

The criticism presented against the explanatory memorandum (see Section 3) does not, in itself, automatically necessitate a repeal of the ban or the associated criminal penalties. Egg donation affects a wide range of rights and protected interests, all of which must be carefully considered when assessing whether and to what extent egg donation should be permitted.

5.1. The Egg Recipient

The right to reproductive self-determination is protected by the general right to personality under Art. *2*(1) in conjunction with Article *1*(1) of the German Basic Law (GG). This right ensures individuals can make decisions about having children without discrimination, coercion, or violence. Reproductive rights (Bredler & Chiofalo, 2023, pp. 5–8; International Conference on Population and Development [ICPD], 1994, para. 7.3) were formally recognized as human rights (European Parliament, 2021, paras. C, F, K; Wapler, 2018, pp. 186–187) during the UN International Conference on Population and Development in Cairo in 1994. They include the freedom to choose whether and how to have children, along with access to necessary information, resources, and services. Consequently, individuals are afforded the freedom to decide not only whether to have children, but also the conditions under which reproduction occurs and how the desire for parenthood is pursued (Gassner et al., 2013, pp. 31–33; S. Klein, 2023, pp. 61, 396; Sanders, 2018, pp. 321–324; Wapler, 2018, pp. 197–198). This right also encompasses the use of medically assisted reproduction with the help of willing third parties (Krönke & Lorenz, 2024, para. 313; Sanders, 2018, pp. 321–324), so the use of external, same-sex reproductive potential is protected, provided that third-party rights are not violated (M. Klein, 2019, pp. 76–84).

Therefore, the use of an egg voluntarily given by another person to fulfill one's own desire for children falls within the scope of the protection of reproductive self-determination. However, this fundamental right does not give rise to a subjective legal claim against the egg donor (Dorneck, 2018, p. 71; Hieb, 2005, p. 35). Nor does it entail a state obligation to provide access to donor eggs as part of a social benefits framework (M. Klein, 2019, p. 71). However, the fundamental right to reproductive self-determination is infringed upon if state measures prevent access to medically available methods of assisted reproduction (Brosius-Gersdorf, 2021, para. 450; BVerfG, 1999, p. 3401).

The right to bodily integrity under Article *2*(2)(1) GG is also relevant for the egg recipient, especially concerning the medical procedure involved. This right obliges the state to protect individuals from harm and prevent infringements of their bodily integrity (BVerfG, 1981, p. 78, 2008b, p. 356). However, once the egg recipient has been properly informed (see Section 6) about the medical risks associated with egg donation, their decision to undergo the procedure must be respected.

Finally, the principle of equality under Article 3 of the GG should be considered. While sperm donation is currently legal in Germany, egg donation remains prohibited under the ESchG. There is no justifiable reason for the differential treatment of women and men in the context of gamete donation (Coester-Waltjen, 2014,

pp. 193–195; Dethloff, 2018, p. 231; Kersten, 2018, p. 1253). The argument that the bond between mother and child is inherently different from that between father and child is not universally applicable (Leopoldina & Union of the German Academies of Sciences and Humanities, 2019, p. 41). A simple equalization of egg and sperm donation is inappropriate, as egg donation requires a significantly more intensive medical intervention. However, the differing medical risks alone do not justify unequal treatment (Beier et al., 2018, p. 156; djb, 2024, pp. 7, 18). Instead, they can be addressed through legal safeguards (see Section 6). A complete prohibition is not necessary (Dorneck, 2018, p. 138; Heun, 2008, p. 59).

5.2. The Egg Donor

For the egg donor, the criminal ban on egg donation constitutes an infringement of their right to reproductive self-determination (Article *2*(1) in conjunction with Article *1*(1) of the GG) only when the donation is motivated by the desire to take on parental responsibility. This is not the case if the egg donation is meant to support someone else's family planning (M. Klein, 2019, pp. 69–70). In this case, however, the ban interferes with the general freedom of action of the egg donor as stipulated in Article *2*(1) of the GG. If the donation is part of a shared family-building project (e.g., reciprocal egg donation within a homosexual couple), then both the desire for children and the assumption of parental responsibility apply to both parties. In this case, the ban on egg donation constitutes an interference with the egg donor's right to reproductive self-determination.

Central to the debate is the protection of the egg donor from the risks of exploitation, discrimination, abuse, and physical as well as psychological harm (Wiesemann, 2023). For the egg donor, the primary medical risks arise from the procedure itself, which is typically carried out without pay. The state has an obligation to protect the physical integrity of the egg donor. The legislator has considerable discretion in determining how to provide this protection (BVerfG, 1977, pp. 164–165), but criminal law should only be considered as a last resort in cases where there is a clear and specific threat to the egg donor's health (djb, 2024, p. 15). Individuals are generally free to consent to various medical procedures or engage in lifestyle choices that could pose risks to their health, and the state cannot prohibit such self-harming behaviour (Di Fabio, 2021, para. 82–85). However, legal intervention may be justified in cases where coercion or undue pressure compel someone to donate eggs. A criminal ban would be appropriate only in cases of exploitation or abuse, such as in scenarios where an egg donor is forced to undergo the procedure. It is important to note that there are already existing provisions in German criminal law addressing (serious) bodily harm, coercion, unlawful organ removal, and human trafficking, as laid down in paras. 226, 232, and 240 of the German Criminal Code (*Strafgesetzbuch*), and paras. 17 and 18 of the Transplantation Act (*Transplantationsgesetz*). These could be further refined to address exploitative egg donation more specifically (djb, 2024, pp. 15, 19–21). In cases where exploitation is less clear, the state could address the remaining potential for exploitation if egg donation is driven by financial hardship or compulsion by adopting less intrusive measures. For instance, regulations ensuring adequate information, informed consent (Bals-Pratsch & du Bois, 2022, pp. 331–333), and protection against undue influence could be implemented, prioritizing transparency and procedural safeguards.

The issue of human dignity (Article *1*(1) of the GG) is also frequently discussed in relation to egg donors in constitutional and ethical debates, as there is a concern that donors could be objectified and stripped of their subjectivity. However, there is no evidence of any harm that would warrant the severe measure of a criminal prohibition as a response (Gassner et al., 2013, p. 36; Rosenau, 2022, para. 85). Human dignity is violated when a person is reduced to an object and deprived of their autonomy (BVerfG, 1992b, p. 228; Herdegen,

2023, para. 36). In its 2020 ruling on assisted suicide, the German Federal Constitutional Court emphasized that human dignity is fundamentally tied to respect for individual self-determination (BVerfG, 2020, p. 261). In this sense, the decision of a person to donate their eggs should also be respected, as it falls within their autonomy. It would be unjust to universally deny egg donors the ability to make a self-determined decision. The state's responsibility should not extend to paternalistic overregulation or the unnecessary protection of individuals from their own decisions (Kersten, 2018, p. 1249).

5.3. The Child

With regard to the child, the central concern is the right to know one's origins, which is part of the broader right to personal identity (Article *2*(1) in conjunction with Article *1*(1) of GG), as recognized by the German Federal Constitutional Court (BVerfG, 1989, p. 269, 2016, pp. 186, 202–204). Although there is no automatic entitlement to this information from third parties or the state, there is a constitutional duty to prevent the withholding of available ancestry information (BVerfG, 1994, p. 271, 1997, p. 63, 2016, p. 204).

Furthermore, Article *6*(2) of the GG grants parents the right and duty to care for and raise their children. This duty is closely linked to the child's right to care and protection within a family (Article *6*(2) in conjunction with Article *2*(1) of the GG), which is crucial for the child's development (Britz, 2014, p. 1070; BVerfG, 2008a, p. 93). The state is tasked with ensuring that parental responsibilities are fulfilled in a way that supports the child's well-being (BVerfG, 2013, p. 74). In the case of egg donation, this responsibility extends to recognizing the legal relationship between the intended parents and the child, which is necessary to safeguard the child's constitutional rights (Sanders, 2018, p. 343).

6. Legal Reform Proposals

Invoking the child's best interests as a justification for the prohibition of egg donation is no longer convincing from both a constitutional and international legal perspective. While protecting the best interests of the child is a legitimate aim (BVerfG, 1982, p. 382, 1986, p. 137, 1990, p. 140; Wapler, 2015, p. 100; see also United Nations, 1989, Article *3*(1)), the criminalization of egg donation is not an effective way to achieve this goal.

It is evident that the statutory regulations, based on penal sanctions and nullity provisions, do not adequately reflect the complexity of the constitutional foundations previously outlined. These regulations are concerned nearly exclusively with hypothetical and unscientific risks for the best interests of the child, as discussed in Section 3. The multifaceted positions and interests of the donor and the recipient are completely disregarded. In light of findings from recent empirical studies (Golombok et al., 2023, p. 1069; Ilioi et al., 2017, p. 319), however, this one-sided emphasis on the presumed best interests of the child no longer appears justified (BMG, 2024, pp. 368–370). The focus should move away from categorical bans on egg donation and toward ensuring that the conditions under which such decisions are made are ethically and legally sound. This would include ensuring proper counseling about the health risks of egg donation and implementing measures to prevent exploitative practices. Consequently, maintaining a criminal ban on egg donation is not justified on the grounds of protecting the rights or well-being of the child, the egg donor, or the recipient (Thorn, 2022, p. 135).

The obligation to protect the physical integrity and mental health of the egg donor must serve as the foundation of an alternative regulatory model, as the medical procedure is associated with risks and there is

an undeniable potential peril of exploitation. The medical risks are generally not life-threatening, and any potential long-term effects are rare. Proper regulations, including informed consent, insurance requirements, and limits on the number of egg donations, could mitigate these risks (Dethloff, 2018, pp. 231–232). If an egg donor makes an informed, voluntary decision after being properly counselled, their decision should be respected without the need for further paternalistic intervention by the law (Hieb, 2005, pp. 192, 195; Kersten, 2018, p. 1253; Thorn, 2022, p. 136; Wellenhofer, 2024, para. 50).

A publicly determined compensation for the egg donor in combination with a limit on the number of egg donation cycles could help prevent exploitation while respecting the donor's autonomy. Such compensation is common in many countries, where financial remuneration is provided in recognition of the significant physical interventions involved, such as hormonal stimulation and egg retrieval (Civio, 2022). While an uncompensated egg donation would prevent donations motivated by economic distress, it would also constitute a significant difference from the treatment of sperm or blood donors and participants in clinical trials, who are compensated. At the same time, however, a compensation may incentivize individuals in economically precarious situations to subject themselves to frequent, health-compromising egg donations out of financial necessity. To prevent this, a maximum number of donations for which compensation is provided could be established based on independent medical expertise. Additional donations beyond this limit should occur without compensation. As a result, further donations would likely be restricted to close friends and family members or reciprocal egg donations (djb, 2024, p. 21).

Concerning the child, the right to know one's origins is crucial. Even if there were concerns about potential harm to a child's welfare, it remains highly doubtful whether this constitutes a significant enough issue to justify preventing the child's existence altogether. Preventing the child's birth is not an appropriate means of protecting the child. Ensuring the child's right to know their biological origins would be a much less intrusive alternative to the ban on egg donation. Research in social and developmental psychology highlights the importance of open communication and transparency about the circumstances of conception, as discussed in Section 3. In this context, the UN Committee on the Rights of the Child [CRC] does not suggest that a lack of genetic connection between the child and the gestational mother is inherently detrimental to the child's welfare, but stresses that children should have the opportunity to access information about their biological origins (CRC, 2013, para. 56). This could be addressed by state measures that protect the child's right to information, such as the right to know the identity of the egg donor, achieved through legal rights of the child to obtain information from their legal parents about their biological origin. While challenges may arise in practice if such information is poorly documented, the introduction of similar frameworks to the sperm donor registry (established by the Sperm Donor Registry Act of 2017) could serve as a basis. This act gives children the right to access donor information from the Federal Institute for Drugs and Medical Devices and ensures that the donor is not legally recognized as the child's parent. Furthermore, providing counselling for prospective parents, which emphasizes the importance of transparency regarding the child's conception and early discussions with the child, could also be an effective approach. These measures would be significantly less restrictive than the criminal prohibition of egg donation.

Legalizing egg donation in Germany with appropriate regulations could also promote the child's right to know their origins and help reduce the exploitation of women in other countries where such practices are less regulated. Today, reproductive medicine is practiced in a globalized market, with fertility clinics worldwide advertising their services online and at fertility expos, and people being able to travel abroad to fulfill their

wish for a child. In some of these countries, the rights of egg donors are endangered as there are insufficient protective measures (Cattapan, 2016; Perler, 2022, pp. 90–91). The right of the child to know their origins is not respected, especially in countries where only anonymous donation is allowed, as discussed in Section 4. If individuals wishing to have children could access egg donation in Germany, they would no longer need to incur the risks and potential harms for both donors and children associated with seeking treatment abroad (Pennings et al., 2008; Storrow, 2005, 2011). However, this argument should be approached with caution, as even after legalization in Germany, individuals may still choose to travel abroad due to lower costs, shorter wait times, or the possibility of anonymity.

7. Conclusion

Egg donation engenders complex questions related to equality, law, medicine, and ethics, with profound implications for women and children. Consequently, it has been a topic of debate for decades. It involves concerns about the physical integrity and reproductive autonomy of both the egg donor and the recipient, as well as the protection against exploitation, the well-being of the child, and the child's right to know their biological origin. A nuanced, feminist, and intersectional approach is essential in addressing this topic that defies simple solutions.

The current criminal ban in Germany is disproportionate, as it excessively infringes upon the rights of both the egg donor and the recipient. Those seeking to fulfill their desire for children through egg donation are currently unable to do so in Germany. This criminal penalty is an intense intervention that, even if there were concerns for the child's welfare, lacks sufficient justification. Any potential risks for the child could be addressed through other, less restrictive measures, such as the provision of accessible counselling services for intended parents to ensure they are realistically informed about the success rates of reproductive treatments and, later, the necessity of providing children with early and age-appropriate information about the nature of their conception.

Protecting the interests of the egg donor does not justify a criminal prohibition on the transfer of eggs either. One key presupposition and implication of respecting women's actual choices and perspectives is a minimal level of confidence in women's decision-making capacities. Were a woman's ability to make informed decisions deemed inadequate to safeguard her well-being, there would be scant justification for legal or policy frameworks to respect her preferences. However, the argument becomes more contentious when it asserts that women can only make generally reliable choices if two conditions are met. First, such decisions must be made under circumstances that ensure their reliability, meaning they must have access to a sufficiently broad and morally acceptable range of alternatives, and must be able to make decisions free from coercion, manipulation, or deception. Additionally, women must have developed the necessary capacities to reflect upon their situations and make informed decisions earlier in life, which presupposes adequate opportunities and guidance to cultivate these skills (Friedman, 2003, pp. 188–190, in the context of female genital surgery). But most of the punishable acts related to egg donation are already criminalized under current German criminal law provisions. The interests of egg donors can be safeguarded through independent medical counselling that informs them of the medical risks involved and a state-defined compensation in combination with a medically informed limit on the number of donations.

Finally, the increasing demand for reproductive medical treatments should be seen in the context of a society where younger people still do not have sufficient support in balancing work and family life. From the perspective of reproductive justice (Bredler & Chiofalo, 2023, pp. 6–8; Lembke, 2024, p. 11; Ross & Solinger, 2017, p. 65) as an aspect of social justice, the legalization of reproductive medical procedures should be accompanied by initiatives that include education about risks, adequate social security, psychosocial support, and measures to address women's poverty and improve the compatibility of parenthood with professional life, especially for younger individuals.

Acknowledgments

I would like to thank Anna Schneeberg (Bucerius Law School) and Fiona Richter (Universität Rostock) for their support in sourcing and organizing the relevant materials, compiling the relevant literature, and assisting with linguistic refinement. Their careful work and attention to detail were of great help in preparing this text.

Conflict of Interests

The author declares no conflict of interests.

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Social Inclusion
2025 • Volume 13 • Article 10442
https://doi.org/10.17645/si.10442

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Open Access Journal

From Restrictive to Permissive Legislation: Egg Donation in Norway

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Submitted: 30 March 2025 **Accepted:** 2 July 2025 **Published:** 11 September 2025

Issue: This article is part of the issue entitled "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

In 2020, following years of political debate, the Norwegian parliament passed legislation that eased restrictions on assisted reproductive technologies, including egg donation. This article examines the implications of this legislative shift in a country that had previously been characterised by highly restrictive policies on assisted reproductive technologies. The transition from a restrictive to a more permissive regulatory framework offers a unique opportunity to explore both continuity and change in cultural norms surrounding reproduction, gender, family and kinship. To investigate these dynamics, we conducted interviews with 20 women of reproductive age who were potentially eligible to donate eggs. Our aim was to explore the cultural values shaping their reflections on egg donation. Whilst political and media discourse has largely emphasised the benefits for recipients of donated eggs, feminist scholarship has drawn attention to the experiences and motivations of donors. This study contributes to the field by focusing on women who have no direct experience with egg donation and no particular expertise or personal investment in the topic. By doing so, we shed light on how broader cultural values inform individual-level negotiations and meaning-making around reproductive technologies. Situated within the context of a Nordic welfare state—where ideals such as social equality, gender equality and universal access to welfare services are deeply embedded—we find that the women's attitudes towards egg donation reflect core Norwegian cultural values. At the same time, these attitudes reveal underlying tensions between competing values, suggesting potential for normative change. The decision to donate eggs emerges as a complex and ambivalent one, particularly in relation to the biological and social implications of having a genetic connection to a child born through donation.

Keywords

assisted reproductive technologies; cultural values; egg donation; family; gender; Norway; social equality

1. Introduction

Within Europe, the legislation regarding assisted reproductive technologies (ARTs) and access to them has varied immensely among countries, ranging from a laissez-faire approach to more restrictive legislation. The most restrictive countries in this regard have been Germany, Switzerland, Austria, and Norway (Engeli & Allison, 2017). In 2020, after many years of political debate, the Norwegian parliament voted in favour of a more permissive legal framework, including access to egg donation. The aim of this article is to explore how women in Norway reflect on the legalisation of egg donation and the possibility of being egg donors.

So far, research on ARTs in Norway has mostly focused on policy and regulations (Melhuus, 2012; Spilker, 2017; Spilker & Lie, 2007, 2016; Stuvøy, 2024; Stuvøy et al., 2021). The international literature on egg donation has explored the motivations of women who have donated eggs and how they reflect on this experience, as well as women who have received donated eggs, often analysed within the framework of commercialisation and a transnational reproductive bioeconomy (e.g., Molas & Perler, 2024; Waldby, 2019). Qualitative studies have included interviews with egg donors, thus directing focus towards women who have made the decision to donate (Almeling, 2017; Closas, 2021; Haylett, 2012; Lafuente-Funes et al., 2022; Molas & Perler, 2020; Orobitg & Salazar, 2006). Our study, however, focuses on "women in general," by interviewing women in the age group eligible for egg donation but who had no particular interest in or experience with egg donation, and asking them to reflect on the recent legal change and the possibility of signing up as donors themselves. The focus on "women in general" represents an important contribution to the field of ART research, both in the Norwegian context and internationally, as most previous qualitative studies have concentrated on donors. This article, therefore, offers a unique approach to exploring how women of reproductive age conceptualise reproduction, gender, family, and kinship, and how cultural norms and values are shaped through interaction with this new biotechnical possibility.

The context of this study is a welfare society with a general support for gender equality, social equality, and equal access to social welfare, where increasing social diversity and individualism are challenging more traditional ideas of equality and how it can be achieved. The political change from a restrictive to a more open approach to ARTs gives a unique opportunity to study continuity and change in cultural norms related to human reproduction, gender, family, and kinship—using ARTs as a "looking glass" (Franklin & Inhorn, 2025). In line with this, the aim of the analysis is to explore the cultural norms and values that women draw upon when reflecting on egg donation and their potential or hypothetical involvement in the practice, as donors. Which cultural ideals and practices emerge as particularly salient in the women's reflections on egg donation? What tensions and contradictions arise, and what do they reveal about traditional and changing understandings of reproduction?

2. Fertility and Assisted Reproductive Technologies in Norway

Between 2010 and 2023, Norway's total fertility rate declined from 1.98 to 1.40, reaching a historically low level (Statistics Norway, 2024). During the same period, the average age of mothers at first birth increased, the number of families with three or more children declined, and a growing proportion of the population remained childless (Hart & Kravdal, 2020). This is a global trend, and the reasons are complex. According to the Norwegian Directorate of Health (2022), it is estimated that 10% of all couples require assistance to

conceive, and the use of ART has increased substantially in recent years due to technical advancements and more liberal policies.

In Norway, the welfare state forms the basis for the general welfare of all citizens, such as the provision of childcare and elderly care, education, and basic economic security (Melby et al., 2008). Over the past few decades, Norway has developed a comprehensive public health service for assisted reproduction, offering medical examination and three free IVF trials (Romundstad, 2019). Initially, these services were only available to heterosexual couples, but they were later extended to same-sex female couples and single women (Stuvøy et al., 2021). Private clinics have taken on a significant portion of clients, providing all treatments at a cost. Compared to the private clinics, the public health services have longer queues, and for some services, such as egg freezing without medical indication, the private clinics are the sole providers (Førde, 2024).

Norway was among the first countries to implement legal regulations governing ARTs, having implemented them as early as 1987. The law was entitled the Act on Artificial Procreation (*Lov om kunstig befruktning*) and was later implemented into the more general Act on Biotechnology in 1994. The law was revised twice in the 2000s, but until recently, Norway's legal regulations have been among the strictest in the world, along with those in Germany, Austria, and Switzerland (Bleikli et al., 2004; Engeli & Allison, 2017; Melhuus, 2012). In Norway, the Christian Democratic Party has been particularly active in shaping the debate, especially by launching the notion of the "sorting society" as the greatest risk associated with a liberal biotechnology law (Melhuus, 2012).

Equality and, in particular, gender equality, which represents the most common interpretation of the term "likestilling" in the Norwegian context, is widely regarded as a core societal value in Norway (Danielsen et al., 2013). The ideal of gender equality is shared across the political spectrum and generally among the public. In line with this, political and public debates on ARTs in Norway have been strongly influenced by gender norms, wherein eggs and sperm are frequently discussed as symbolic representations of women and men, respectively (Lie, 2012, 2015). When it comes to the question of egg donation, which for a long time was a politically contested issue in Norway, the public debates reveal significant cultural and political diversity. Social democratic parties have long maintained that policies on ART should be guided by principles of gender equality, arguing that if sperm donation is permitted, egg donation should likewise be legal (Lie et al., 2011; Spilker & Lie, 2007). In contrast, conservative parties have contended that such policies should reflect biological differences between women and men, asserting that there are inherent limits to the application of gender equality in this domain (Melhuus, 2022; Spilker & Lie, 2007). During the parliamentary debates on egg donation preceding the 2020 amendment to the Biotechnology Act, the principle of social equality was broadly endorsed (Stuvøy et al., 2021). At that time, political emphasis on equality and equal rights extended to include women and men, same-sex couples, single individuals, economic equity, and equitable access to fertility treatment throughout Norway.

In 2020, a significant shift occurred in Norwegian policy through amendments to the Biotechnology Act. There was near consensus across the political spectrum not only to legalise egg donation but also to permit access to early ultrasound and non-invasive prenatal testing, both of which had previously been prohibited to prevent the emergence of a so-called "sorting society" (Stuvøy et al., 2021). Access to ART for single women, as well as egg freezing for social—not solely medical—reasons, was also legalised. At this time, political discourse emphasised the availability of new technologies, the importance of equitable access across social groups, and

the need for Norway to be forward-looking rather than lagging behind in technological development (Stuvøy et al., 2021). Since 2003, sperm donation has required identifiable donors, and the same requirement now applies to egg donation. This means that children conceived through donated gametes have the right to know the identity of the donor upon reaching the age of 15.

The egg donor has been largely absent from political discourse surrounding egg donation in Norway throughout the 2000s (Kristensen & Lie, 2023; Stuvøy, 2024). However, the new legislation has introduced several regulations specifically concerning the donor. In addition to the age restriction (25–35 years), the law imposes a limit on the number of donations (a maximum of three retrievals per donor) and stipulates that donors are not entitled to information about the outcome of their donation. This means that a donor will not know whether a child has resulted from the donation unless they are contacted after a minimum of 15 years. Another key provision in the guidelines is that donors should not receive any form of reward beyond modest financial compensation. This is framed as "altruistic donation with modest compensation," which—after considerable debate—was defined as compensation for time spent, rather than for medical risk or psychological burden (Stuvøy, 2024, p. 117). Altruism, in this context, refers to the motivation for donating eggs, which, according to both political debates and the Norwegian Directorate of Health's informational text for potential donors, is described as a desire to "help individuals who are unable to have children by other means" (Norwegian Directorate of Health, 2021).

3. Theoretical Perspectives

To guide the analysis, we draw on theories and concepts that belong to the field of cultural analysis. The purpose of cultural analysis is to develop analytical tools for interpreting cultural ideals and the ways in which they are practised but also changed by everyday behaviours (Gullestad, 1992, 2002). Our analyses are informed by theoretical frameworks and concepts developed by Norwegian cultural scholars to identify norms and values specific to the Norwegian cultural context.

Equality is considered an overall ideal as well as a cultural norm in Norway. As social anthropologist Marianne Gullestad (1992) has observed, Norwegians are obsessed with the norm of equality, often confusing the meaning of this term with "being the same" (in Norwegian, both terms are covered by the same word: *lik*). This means that, in Norwegian culture, there is an understanding of equality as sameness: To be equal, you must be, or have, the same (Døving, 2020; Gullestad, 1992). This is indicated in the recent political debate regarding the amendment of the biotechnology law, where equal access to reproductive technologies was a prominent argument (Stuvøy et al., 2021). At the same time, there was a new emphasis on individual choice compared to previous political debates concerned with legal restrictions, indicating a new ideal of the modern woman making an informed personal choice.

Norwegian society has traditionally been family-oriented, with the nuclear family serving as both the cultural ideal and the primary legal and social organising unit (Døving, 2020; Gullestad, 1984/2001). This ideal implies that a new couple is expected to establish an independent household, reflecting the core value of autonomy. While gender norms are evolving and an increasing number of individuals live in single-person households and households consisting of complicated family relations (for example, due to divorce), it has become more common for same-sex couples to establish conventional nuclear families with children (Ravn et al., 2016). Gullestad (1984/2001) highlights that the Norwegian home is a deeply private and symbolically significant

space, central to family unity and identity. This is further reinforced through home decoration, which serves as an expression of the family's lifestyle and values. In line with this strong emphasis on the nuclear family, having children is still the ideal for most women and men in Norway, although the number of children per woman is decreasing. Aligned with the possibly conflicting ideals of gender equality and individualism, having children should ideally be a joint decision between partners, meaning that they wait until both are ready, and ideally equally willing (Ravn & Lie, 2013). This corresponds to two different characteristics of Norwegian culture, as being both family-oriented and highly individualistic. Individual rights and individual freedom are core values, with independence being an ideal both in upbringing and adult life (Gullestad, 1992).

ARTs represent not only new ways of making children but also a need for producing parenthood (Thompson, 2005). When gametes are donated, parenthood becomes ambiguous, prompting debates about biological, genetic, and social parenthood. In discussing questions of kinship relations after IVF, the social anthropologist Sarah Franklin (2013) suggests the term "relatively biological" to represent the new understanding of parenthood and kinship, as people try to come to terms with the new technological interventions. Whereas ARTs create new perceptions of kinship, the traditional understanding of biologically determined parenthood remains influential in the debate about what procedures should be legal: what is understood as just a helping hand, and what is understood as being "against nature." Kinship symbolises the relation between nature and culture, according to Strathern (1992), and this relationship is being redefined with the inclusion of ARTs. In Norway, the definition of motherhood has gained significant attention in the political debate about egg donation, with the claim that the question of who the mother is should never arise (Spilker & Lie, 2007). Also, the difference of gametes inside and outside the body has been referred to in the debate, with an emphasis on sperm cells having "gone astray," whereas the egg cells have been perceived as integral to the female body—until egg donation.

Bearing in mind that the family and the home are very private matters in Norwegian culture, egg donation may potentially create tension in the demarcation of family and kinship relations. Theoretically, a 15-year-old child may suddenly appear, creating a "crack in the door" of the private family and household (Milligan et al., 2010). This scenario raises numerous questions about new relationships, not only with the donor but also with all family members, and the unity of the family.

4. Methods and Data

To explore the questions about traditional and changing cultural values, we draw on qualitative interviews with 20 women aged 25–35, which means that they would legally qualify to become egg donors based on their age. Neither prior knowledge nor experience of egg donation was a recruitment criterion, nor were family situation or other life circumstances. The interviews were conducted by the authors and a research assistant, and the participants were recruited through the extended networks of the interviewers, as well as through snowball sampling, which means that some of the interviewees helped us to identify more women that we could interview (Kristensen & Ravn, 2015).

Our aim was not to achieve representativeness in a statistical sense but rather to gain insight into a broad spectrum of understandings and opinions. To a large extent, this was successfully achieved. The women we interviewed constitute a diverse group, exhibiting considerable variation across multiple dimensions. They lived in different parts of Norway and had various life situations and careers. Half of the women had children

or were pregnant at the time of the interview, four were single, two were in same-sex relationships, and one defined herself as bisexual. Some worked in the public sector, whilst others worked in the private sector. Some held permanent positions, whilst others held temporary jobs. Although we explicitly tried to recruit women from different social classes to ensure that the study would include the representation of a wide range of perspectives, in retrospect, we see that most of the participants would probably qualify as "middle class," which in a Norwegian context is a broad and rather heterogeneous category in terms of social and economic factors. This is not so surprising, as the middle class tends to be overrepresented in qualitative research where recruitment takes place through the personal and professional networks of researchers (Kristensen & Ravn, 2015). None of the informants had personal experience of egg donation, and only one had experience of ART. To protect the anonymity of the informants, we have assigned them fictitious names. The interviews were conducted one and a half years after the legal change. They took place either face-to-face or digitally (half and half). The interviews lasted for between 30 and 90 minutes and were organised around the following topics: background information (age, family situation, education, and occupation), general knowledge about egg donation ("What do you know about egg donation and the regulation of it?"), personal opinion ("Have you ever donated, or would you consider donating, your eggs?"), and reflections and justification ("What are the reasons for your decision, and what would motivate you to become an egg donor"?). The women were not provided with any information regarding the legal, medical, or practical aspects of egg donation prior to the interviews. Information was only introduced during the interviews in cases where participants explicitly requested clarification or feedback on their own assumptions, or when misunderstandings impeded the flow of the conversation. The decisions to recruit participants without personal experience of egg donation and not to provide them with prior information about the topic before the interviews were based on the assumption that participants' immediate—and potentially exploratory—reflections would offer a particularly valuable point of departure for investigating cultural meaning-making. This is especially pertinent in the field of reproduction, where the personal and the social are so closely intertwined.

The interviews were transcribed verbatim, and when working with the article, the authors have translated selected quotes from Norwegian to English. During translation, we made minor adjustments to ensure that the quotes aligned with the original meaning as closely as possible.

The overarching question that guided our analysis was: How do the informants explain and justify their perceptions of, and positions towards, egg donation, both in relation to their own reproductive pasts and future and within the broader cultural context? To structure our analytical approach to the interview material, we drew inspiration from Braun and Clarke's (2006) thematic analysis and Clarke's (2005) situational analysis. Taking these two approaches on board, we began by familiarising ourselves with the data through repeated readings of each interview before we started identifying words and sentences of particular relevance for the research questions, labelling them with descriptive codes (Braun & Clarke, 2006). Examples of these codes include concerns about medical treatment, questions related to legal regulations, dynamics within the partner relationship and ideals of parenthood. The next step was to group the codes into a set of preliminary themes, which we critically evaluated against the coded data and the data set as a whole to ensure they represented what we had found in the interviews. In line with the cultural analysis, the relation to the broader context in which the interviews were situated is also of great importance and something we wanted to include in our analysis. To support this process, we adopted perspectives from Clarke's situational analysis, which is specifically concerned with situating personal narratives by tracing their origins and understanding their significance (Clarke, 2005, p. 182). More specifically, we constructed

positional maps, which are visual representations of the major positions articulated (and not articulated) in the data in relation to key discursive axes of variation, difference, concern, and controversy surrounding the many complex issues regarding egg donation in general and being an egg donor in particular. In our case, this involved broadening the analytical scope of the interviews by emphasising their cultural and social contexts.

This interview study is based on a limited dataset with acknowledged strengths and limitations. Its primary strength lies in examining processes of change within a specific cultural context. We argue that the depth of the empirical material, together with the contextual specificity and the analytical approaches employed, offers valuable contributions to a research field concerned with broader societal transformations in the domain of reproduction, despite the relatively small sample size.

5. Egg Donation as a Positive Development and an Opportunity to "Do Good"

The overall impression we gained from the interviews regarding the participants' understanding of and attitudes towards egg donation was that they viewed the recent legislative change in a generally positive light. None of the participants expressed disagreement with the legalisation, and aside from a few minor critical reflections on specific aspects of the arrangement, such as the view that the financial compensation was low relative to the effort involved in donating eggs, the prevailing attitude was that the new law represented a positive development. This positive stance was expressed either explicitly (e.g., "I think the new law is a good thing"), sometimes with notable enthusiasm (e.g., "I am very happy about the new regulations"), or more implicitly (e.g., "I cannot see any negative implications of egg donation becoming available in Norway").

Concurrently, we found that most participants were not well informed about the specifics of the new legislation, and that some misunderstandings were persistent. These misunderstandings typically included a lack of awareness that the donor's identity would be accessible to the child upon request at the age of 15, whilst the donor would not receive any information about potential offspring. Some participants were unaware that the law prohibits open donation arrangements, such as donating to a friend or relative. It is also relevant to note that, in these initial expressions of support, the concept of donation and the role of the donor were generally not mentioned. The lack of familiarity with the legal details, along with the absence of references to the donor, suggests that the generally positive attitude towards the new law was not based on detailed knowledge of the arrangement or its regulatory framework, nor on deep reflection about what egg donation entails in practice. Rather, it appears to be motivated by a strong desire to alleviate the suffering experienced by women and couples affected by involuntary childlessness, which is widely recognised as the most pressing social issue that the legalisation of egg donation is intended to address, as evidenced by both the public debates preceding the legalisation and the text of the act (Stuvøy, 2024; Stuvøy et al., 2021).

An example of how this positive attitude was articulated can be found in the conversation with Anne. Anne was in her mid-30s, married with a stepchild, and planning to have another child with her partner. When asked about her reflections on egg donation, Anne said the following:

> First and foremost, I look upon the legalisation [of egg donation] as a great opportunity. I strongly support the new law. Moreover, I am not negative towards the idea of being an egg donor myself or using a donated egg if that would be relevant. So, I am very happy about the new regulations.

As Anne saw it, the new law represented a positive development that she really cared about ("a great opportunity," "strongly support," and "happy").

Another example of this positive engagement with the legalisation of egg donation was provided by Cecilie. Cecilie was 31 years old, married, and pregnant with her first child. When the interviewer asked what she thought about egg donation, she replied:

> I find egg donation exciting as it is a new opportunity in Norway. This makes it fascinating, and we still do not know a lot about the long-term effects, even though there have been many discussions about it with experts involved before the politicians finally made the decision to make it legal in Norway. My overarching notion is that I am okay with egg donation as long as it is legal. I would never have considered it if it was not legal.

In the interview, Cecilie expressed a positive attitude towards the recent legalisation of egg donation, using words such as "exciting" and "fascinating." For Cecilie, the legalisation held a significant value—not only because it enabled the procedure to be carried out in Norway but also because it signified state approval.

From a different vantage point, Fiona, 30 years old, single, and without children, also supported egg donation by expressing her support for those families who want but cannot have a child:

> I think it could be a good thing for those families who do not have any eggs that they can use. I think the question of egg donation exposes some exciting ethical dilemmas, but I see the new law as a mostly positive development, as it makes it possible for a family to have something they really want to have and for a child to have a family who really wants it.

In line with this, Fiona also expressed an interest in becoming an egg donor herself when asked about it in the interview:

> Yes, I have been considering it. Why? Because I think it would be nice to help out in this way. To make someone's wish for a child come true, and hopefully also give a child a nice home with parents who have really been thinking a lot about having a child. I have also been thinking….Or at least tried to think about potential negative things that could happen, and that I would not want to be part of, but my conclusion is that there are probably more positive than negative consequences.

As we see, for Fiona, it was not only a child and parenthood that was potentially produced through egg donation, but also a family. And the idea of a happy family with parents and children who love each other was what would motivate her to become an egg donor. As we will see later, however, quite a few of the women we talked to were worried that this happy outcome cannot be taken for granted, causing worries and concern for the potential egg donor.

6. Egg Donation as a Way to Produce Equality and Sameness

In line with this appreciation of reproduction and the expanded potential for parenthood and family life, we found that the women framed their arguments in terms of promoting equal opportunities for having children

and forming a family. Although egg donation is sometimes framed in terms of "one woman helping another" (Haylett, 2012), in this context, it was generally expressed in terms of creating a (real) family.

This is exemplified by another quote from the interview with Cecilie, who said that she supported the legalisation of egg donation because it would enable more people to experience the joy of pregnancy. When asked whether she would consider becoming an egg donor herself, Cecilie elaborated on this point:

> There are pros and cons. Yes, because it is nice for those who are not able to have a child without it, like, if they do not have healthy eggs themselves. It's like promoting more equality. It's a nice thought. If someone has struggled [to become pregnant] for a long time and gets to the point where they see that without egg donation it will not happen, I think it is nice [the legal access to egg donation].

Rather than offering a definitive personal standpoint on becoming an egg donor, Cecilie articulated a more general argument in support of the legalisation. She emphasised how the arrangement enables infertile individuals and couples to conceive and have children. This framing of egg donation as a means of producing equality between fertile and infertile people was explicitly described as a way of "promoting more equality."

The argument about equality also appeared in the interview with Dina, who was in her early 30s, in a same-sex relationship, and did not have any children. When asked to share her reflections about egg donation, she answered:

> Generally, I think it is a good thing, as it is not always the man who is the problem. And in that sense, it [egg donation] creates a more equal situation where the couple can have some kind of assistance, no matter which party is kind of hampering the possibility [for reproduction]. In same-sex relationships, obviously, I think it is a good thing that you can exchange eggs. Or if one of them has had medical tests showing that they cannot be pregnant themselves, and the partner is willing to do so.

As with Cecilie, Dina's underlying argument in favour of egg donation was to make it possible for more people to have children if they want to. Whilst in the previous quotes the women had taken the heterosexual couple as the self-evident basis for their reflections, Dina introduced other axes of difference—namely, the distinctions between couples with an infertile man and couples with an infertile woman, and between heterosexual couples and same-sex couples. The underlying argument, however, was the same—that more people should be able to have children if they want them and that "technical assistance" should be available to enable this to happen.

This inclusive and equality-promoting perspective on egg donation aligns with how Line, a woman in her mid-30s, married to a man and mother of two children, explained her positive attitude towards egg donation and the legalisation of it:

> I think everyone should be allowed to have children on an equal footing, in the sense that there should be no difference.
>
> [Interviewer: What do you mean by difference?]
>
> I think about being in a same-sex relationship or being single and wanting a child, for example.

As Line saw it, the ways in which people organise their personal lives and who they partner with in romantic relationships should not be an obstacle to having children, if and when ART can help.

Ines was even more explicit about this inclusive and diverse approach to reproduction. Ines was in her early 30s, bisexual but currently in a relationship with a man, and without children. She used the argument of unfairness from a biological perspective when asked about her opinion on the legalisation of egg donation:

> I think that reproduction, having a baby, is, from the beginning, a huge biological unfairness. Lesbian couples cannot at present reproduce, except together with a man, but all, or many, heterosexual people can….I have several friends who are lesbian or bisexual, and some are just sterile, so I think in a way that it is kind of unfair that they do not have as many alternatives…

In Ines' view, technical assistance for reproduction should be available for everyone, and in particular for people who, for various reasons, cannot have children without it. In this way, ARTs, such as egg donation, create possibilities to overcome even biological differences and produce equality where there was previously inequality.

To summarise, equality emerged as a particularly salient value in our data. Yet, unlike many other contexts in which equality is discussed in Norway—where it is often framed in terms of gender equality—our analysis suggests that the emphasis here is not on achieving equality between women and men; rather, it concerns the broader aim of enabling a wider range of individuals in society to access and share similar life experiences. Drawing on Gullestad's (1992) conceptualisation of "a passion for equality," the quotes from our informants reflect efforts to create equality in contexts previously marked by difference.

7. Helping Others to Produce a New Family Versus Protecting One's Own

As we have seen, there was an overall positive attitude to the legalisation of egg donation, but a different question concerns the personal decision to become a donor. Most of the informants instantly pointed to the importance of helping others, of doing good, some even noting that they would feel guilty and selfish if they already had the children that they wanted and did not help others to achieve the same. During the interviews, however, the women's reflections fluctuated back and forth, and the feeling of a relationship with a potential child emerged as a decisive issue.

Berit, aged 30, was a married mother of one child and was expecting twins at the time of the interview. When asked about the possibility of registering as an egg donor herself, she offered the following reflections:

> I don't think I'd want to be an egg donor myself. Actually, I did think about it when I found out I was having twins. I kind of felt a bit guilty, you know? We tend to see the egg as something kind of mysterious, and suddenly I was going to have not just one baby but two, while there are others out there who can't have any. That made me start thinking: I have the ability to donate lots of eggs, but I think the reason I don't is because of the emotional side of it—the attachment. For me, it doesn't feel like you're just donating an egg; it feels like you're giving away a child.

Later in the same interview, the interviewer invited Berit to reflect on how she imagined it might feel if she were to donate an egg and the resulting child were to contact her.

> Oh….I'm not sure. I think I would've thought about it [the donation] a lot in the years after. Like, wondering if everything was okay. I'm pretty sure it would've taken up a lot of mental space. I definitely wouldn't have just "put it in a drawer" and then suddenly had a 15- or 18-year-old show up out of nowhere. But the real question is, would I have been able to not get emotionally involved when we finally met? I think that would be really hard. Suddenly, there's a face, a name, a bit of a story. And if the child wasn't doing well, I know I'd feel guilty. My genes….Did I make the right choice? Maybe I shouldn't have donated. It would've brought up a lot of emotions.

In this quote, Berit articulated a sentiment that was shared by many of the women interviewed, that donating an egg would inevitably lead to imagining a child who was conceived from her genetic material, for whom she might feel concern. In this sense, she would experience a sense of responsibility for a child born from her egg cell, without having the opportunity to care for or ensure the child's well-being. The possibility that this child might later seek contact brings this perceived responsibility into sharper focus. Most of the women said that, to them, a donation would include more than a cell, and some explicitly stated that an egg is nearly a child, which would make them feel responsible for the potential child's future and welfare (see also Kristensen & Lie, 2023).

Mina, who was 25 years old and had no children, instantly replied very positively to the question of being a donor. She felt that this would help involuntarily childless persons:

> No problem! I'd be happy to do it! It's really about the pain people go through when they can't have children. It might sound selfish, but I think it would feel good to have helped someone in such a vulnerable situation. And of course, I'd be open to contact. Personally, though, I think I'd want to keep a bit of distance—a healthy kind of distance. Like, "It's totally fine if we meet and you know who I am, but I wouldn't see myself as your mother or part of your family…"

Still, later in the interview, she returned to this topic and reflected on her feelings associated with any children who may have resulted from her donated eggs.

> To me, it would be strange knowing that there was someone out there that was part of me that I actually had no contact with, and I think that to a large extent, I would be thinking a lot about "Are they okay? Are they doing well? What are they up to?"

Although Mina expressed an expected intention to maintain emotional distance, it is clear that she was not entirely convinced that she would be able to do so if she were to become an egg donor. When reflecting on the prospect of having children of her own, the tension between perceived selfishness and the desire to do good resurfaced:

> What matters most to me is first knowing whether I can have children of my own. I want to be sure, first of all, that everything's okay—that I have good eggs, so in theory, I could donate them. But if I'm being honest and thinking a bit selfishly, I'd really just like to know that I have some good eggs for myself, to be able to have my own children.

Reflecting on the question of being an egg donor, one's own family became a vital matter. Mina wanted to ensure that she would be able to have her own children and felt that her own family must come first.

Siri, who was 31 and had two children, shared a sentiment that was similar to most of the others, being generally positive about the legal access to egg donation but reflecting on what it would mean for herself and her family if she were to volunteer as a donor:

> I realise that there has been a lawful decision [on egg donation] and I think it is good for those who do not have the possibility, who are perhaps struggling to have children. But still, if it were me, if I were to donate, I do not quite know how—I mean, in some way it would become kin, if you know what I mean. Suddenly, you might have many of your own kin, and you would not know who they were….And then, there is the question of my own children having siblings, and they would not know who their siblings were.

A donation affects not only the donors' relationship with potential children but also their family members, on whose behalf they are also making the decision. The women wondered what their partner would think, and some of them said that he or she would probably respect their decision, but for most of them, it was a question that had not yet become relevant.

Whilst Siri saw egg donation as creating a kind of kinship and interfering with her family in a problematic way, Eli imagined new possibilities for family structures. Aged 26 and without children, Eli was asked about the possibility of her potentially donated egg resulting in a child. She replied that this was the most exciting aspect of egg donation:

> I think it is good that the traditional "A4" family model is being challenged, and that people are exploring new ways of creating and being a family. It shows that family is a dynamic concept—one that thankfully allows for more possibilities. It can be more like a project, something you figure out based on your own needs and wishes, and through dialogue with those who are, in principle, the parents and responsible for the child—and even with the child, if they are aware of it. Maybe I would have felt like a godmother or a godparent, or something along those lines. I think I would have wondered about the child anyway, thought about them before they turned 15—where they were, how they were doing, all of that.

Although the traditional family served as the primary frame of reference for most of the women interviewed, some of their responses—such as Eli's—explored how emerging reproductive possibilities might enable the formation of new and alternative family structures. Eli envisioned a familial relationship with a potential child that would extend beyond conventional norms, imagining it as part of a redefined concept of family. Her reflections highlight a tension that was present in several of the interviews: On the one hand, many of the women regarded the nuclear family—comprising parents and children—as a self-evident ideal; on the other hand, they acknowledged the transformative potential of egg donation in enabling single women and same-sex couples to pursue parenthood and imagining alternative relationships. In this sense, the family continued to be largely perceived as private and defined. At the same time, the women's reluctance to donate eggs may also be interpreted as a reflection of the perceived fragility of the family; it can be challenged by relationships that do not easily conform to familiar patterns but that simultaneously embody deeply familiar ties—namely, those of biological kinship.

8. Concluding Reflections

The women we interviewed expressed strong and explicit support for the recent legal reform that permitted access to egg donation in Norway. Their support was grounded in the value of enabling other women and couples to have children and thereby form families—an outcome that was consistently framed as both meaningful and positive. This discourse on egg donation is in line with the arguments that were put forward in political debates leading up to the enactment of the new Biotechnology Act, as well as formulations embedded in the legislation itself, whereby assisting infertile couples to have children was often framed as most important (Stuvøy, 2024; Stuvøy et al., 2021). This suggests that the law and its underlying rationale are firmly grounded in broadly shared Norwegian cultural norms and values—particularly a culturally naturalised view of the desire for children (Ravn, 2017) and a strong orientation towards the family (Gullestad, 1992, 1984/2001). The fact that several of the participants themselves led lives that might not be described as traditional or family-oriented can, in this context, be interpreted as an indication that prevailing norms remain powerful—stronger, in fact, than the potential challenges posed by individual choices and personal life trajectories.

At the same time, the recent legalisation of egg donation in Norway—which grants single women and same-sex couples access to the technology—may be seen as indicative of a broader societal shift towards the acceptance of diverse family forms, a development that received broad support among the women that we interviewed. In this context, egg donation enables new avenues for family formation, thereby producing a tension between the cultural ideal of the nuclear family—characterised by a close alignment of genetic and social kinship—and the growing recognition of alternative family structures, in which relational configurations and dynamics may be more fluid and complex.

Moreover, the women appeared to take for granted that supporting women and couples who are involuntarily childless falls within the responsibilities of the welfare state and constitutes an integral part of the public healthcare system. When it comes to egg donation, however, the participants clearly framed it as a matter of personal choice. When asked about their partner's perspective, most respondents indicated that this had not been a topic of discussion. However, they generally trusted that the partner would support their personal decision. Moreover, there was a concern among the women that donation might affect the possibility of having their own children and that it would be better to have those first. The question of egg donation, therefore, involves reflections regarding their present or potential family in the time to come. Notably, several of the women nonetheless articulated the view that egg donation represents a form of moral obligation, suggesting that women who meet the eligibility criteria in terms of age and health should ideally volunteer to donate eggs in order to help fulfil other women's and couples' unquestioned desire to have a child.

In addition to enabling the formation of families with children, egg donation was also framed as a means of promoting equality, particularly in contexts where various forms of diversity might otherwise lead to inequality. This reflects a culturally specific conception of equality in Norway, where equality is often equated with sameness—that is, to be equal is to have or be the same (Døving, 2020; Gullestad, 1992). Consequently, it was considered fair that everyone should have the opportunity to have children, regardless of differences in economic or social status, biomedical conditions, or sexual orientation. Equal access to what is perceived as "equal lives"—including children, family, and a stable home—was presented as an ideal that these young women either already possessed or envisioned as part of their future. Whilst this notion

may be interpreted as a form of social inclusion, it is more commonly understood within the framework of the Nordic social democratic tradition, which emphasises conformity. This was evident in a few dissenting voices that instead upheld the ideal that egg donation might contribute to greater diversity in family forms.

Although volunteering as an egg donor was often articulated as a moral obligation to help others, this perspective was frequently counterbalanced by other cultural values, particularly those emphasising the privacy of the family and the intimate connection between kinship and care. The prospect of a donor-conceived child potentially appearing 15 years later was generally perceived as both intriguing and unsettling. Such a child would resist easy classification within conventional kin/non-kin categories, and was sometimes portrayed as representing an intrusion into the private sphere of the family.

Biologically, however, the child would be kin, as the women themselves acknowledged—They would have contributed half of the child's genetic material. This biological relatedness implies a latent obligation of care, which the donor would be structurally unable to fulfil during the child's formative years and would perhaps never be able to. This generated emotional dilemmas and ethical concerns, particularly in relation to caring for oneself and one's own existing or future family. Thus, care for involuntarily childless individuals may come into conflict with the imperative of self-care and care for one's own kin. Given the very low number of egg donors in Norway, and the fact that only a small proportion of our informants expressed a willingness to donate even in a hypothetical and non-binding context, it appears that caring for oneself and one's own family tends to take precedence. Although egg donation and other forms of reproductive technology open up new possibilities for family-making, the findings suggest that the nuclear family and traditional family forms continue to hold a strong normative position in Norwegian society.

Acknowledgments

The authors are grateful to the editors of the thematic issue and the three anonymous reviewers for their insightful feedback. We also appreciate the language support provided by Glyn Winter at Semantix, whose editing contributed to the final quality of the text.

Conflict of Interests

The authors declare no conflict of interests.

Disclosure of LLMs

Earlier drafts of the manuscript were linguistically refined using Microsoft Copilot, an AI-powered language model based on OpenAI's GPT architecture. The tool was employed exclusively for language-related suggestions, including grammar, syntax, and phrasing. All AI-assisted edits were carefully reviewed and approved by the authors. The final version of the manuscript underwent professional language editing by a human proofreader.

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Social Inclusion
2025 • Volume 13 • Article 10390
https://doi.org/10.17645/si.10390

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Open Access Journal

Selective Pronatalism and Reproductive Autonomy: Attitudes Toward Medically Assisted Reproduction in Hungary

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Submitted: 24 March 2025 **Accepted:** 4 June 2025 **Published:** 23 July 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

This study explores how social and political factors shape attitudes toward medically assisted reproduction in Hungary, focusing on the selective pronatalist policies that prioritize middle-class, heteronormative families while marginalizing LGBTQ+ individuals. In a national context where childbearing is framed as a societal expectation and voluntary childlessness is less accepted than in Western and Northern Europe, these policies play a pivotal role in shaping public attitudes. Drawing on data from a 2024 nationwide representative survey, the study examines the influence of sociodemographic variables on public support for medically assisted reproduction, with particular attention to attitudes toward lesbian couples' access to in-vitro fertilization. The findings reveal that individuals concerned about population decline and those with strong nationalist sentiments are more likely to support medically assisted reproduction, while those who are more accepting of voluntary childlessness show less support. However, access to medically assisted reproduction for lesbian couples is significantly less supported, particularly among those who endorse traditional gender roles and nationalist ideologies. These results underscore the intersection of pronatalist policies, nationalist narratives, and social exclusion, raising critical questions about reproductive autonomy, inclusivity, and the ethical implications of state-supported fertility programmes. The study contributes to broader debates on how reproductive policies reflect, reinforce, and actively shape societal norms, particularly in contexts where demographic anxieties and nationalist agendas converge.

Keywords

attitudes toward migration; lesbian couples; medically assisted reproduction; pronatalist context; voluntary childlessness

1. Introduction

The growing influence of right-wing political parties across Europe, including Hungary, has increasingly shaped welfare state policies, particularly those related to family support systems (Ennser-Jedenastik, 2021). These parties' political agendas strongly emphasize traditional gender roles and pronatalist objectives, which significantly influence the framing of medically assisted reproduction (MAR) not only as a medical necessity but as a tool for national survival (Korolczuk, 2021).

Within this framework, migration is often portrayed as a threat to national identity and demographic stability. Right-wing narratives frequently depict immigration as undermining not only economic and social cohesion but also the cultural and ethnic homogeneity of the nation. As a result, migration is viewed with suspicion, while childbearing is framed as a patriotic duty aimed at ensuring the reproduction of the "native" population (Melegh, 2023; Rasmussen, 2023). This approach often excludes marginalized groups, such as LGBTQ+ individuals and single women, who are not considered "ideal" parents in the context of nationalist goals (Herke, 2021; Szalma & Takács, 2025).

In the Hungarian socio-political context, where childbearing is seen not only as a private matter but also as a national priority (Rasmussen, 2023; Szalma & Takács, 2025), policies aimed at supporting fertility are central to achieving demographic objectives. The government's support for MAR is part of its broader strategy to increase fertility rates and counteract population decline, in response to the perceived demographic crisis. Notably, MAR can contribute to approximately 4–5% of annual births in countries with advanced fertility infrastructures, underscoring its role as a critical pillar in achieving national fertility targets (Lazzari et al., 2021). A central element of this strategy is the government's goal to reach a fertility rate of 2.1 by 2030, which is considered the replacement level needed to sustain population growth. To achieve this, the Hungarian government has implemented a range of pronatalist policies, including state-funded MAR treatments that cover up to five cycles of treatment and necessary medications (Szalma & Sipos, 2024). This ambitious target reflects the government's commitment to addressing demographic decline through domestic solutions, rather than relying on immigration.

This aim is rooted in widespread societal fears of a so-called "Hungarian extinction." Immigration is largely perceived in a negative light (Melegh, 2023), while childbearing is framed not merely as a personal choice but as a collective obligation (Spéder & Bálint, 2024). Within this context, some right-wing political actors regard MAR as a strategic tool for addressing population decline, reducing immigration, and ensuring the continuation of an "ethnically homogeneous" nation (Korolczuk, 2021). For example, the state fully subsidizes MAR treatments, emphasizing its role in national demographic policy.

The growing utilization of MAR in countries with declining birth rates, such as in parts of Europe and Asia, often signals a demographic intervention that serves the economic and nationalistic interests of the state, sometimes at the expense of individual freedoms. For example, as fertility rates in countries like South Korea or Hungary continue to fall, MAR is increasingly framed not just as a medical necessity for individuals, but as a societal imperative that directly ties individual reproductive choices to national survival (Ji-Young, 2024). This framing blurs the line between reproductive autonomy and state control, as pronatalist policies may tie MAR access to nationalistic objectives, inadvertently restricting individual choices.

Moreover, these policies do not uniformly support all individuals in their reproductive choices. While they actively encourage childbirth among groups the state deems "ideal"—such as ethnically majority, married heterosexual couples—they simultaneously exclude or marginalize other potential parents, such as LGBTQ+ individuals (Szalma et al., 2022). This selective pronatalism reflects a broader ideological framework that prioritizes the reproduction of certain groups while restricting access to reproductive technologies for marginalized communities, including Roma women (Hašková & Dudová, 2020).

As MAR becomes a central tool in national efforts to boost fertility, the concept of "family" and "parenthood" can be narrowed, reinforcing traditional, exclusionary gender roles and identities. This dynamic raises important ethical questions about the extent to which MAR, while expanding reproductive possibilities, may simultaneously reproduce discriminatory structures, especially when it intersects with pronatalist policies that privilege certain groups over others.

This study aims to assess how various sociodemographic variables influence attitudes towards MAR in Hungary. Specifically, it investigates whether individuals concerned about population decline and hold strong national sentiments view MAR more favourably than those who are less concerned and more accepting of voluntary childlessness. Additionally, the study examines how attitudes toward issues such as migration, nationalism, and voluntary childlessness influence support for lesbian women's access to in vitro fertilization (IVF). While prior literature uses the broader term medically assisted reproduction, our analysis focuses on in vitro fertilization due to its policy relevance in Hungary and alignment with survey measures. This specificity allows us to examine IVF—a key MAR technology within Hungary's pronatalist framework—while ensuring consistency with broader MAR research.

2. Contextual Background

2.1. Population Framework

Hungary's pronatalist agenda, while intensified under Fidesz after its 2010 electoral victory, builds on earlier state efforts to counteract demographic stagnation. Policies targeting birth rates—from mid-20th century abortion restrictions to financial incentives for families—reflect a long-standing anxiety over population decline (Vukovich, 1991). In 2010, the right-wing conservative party Fidesz came to power in Hungary with a two-thirds majority in parliament. This supermajority enabled the government not only to govern with significant control but also to amend and even rewrite the country's constitution. Since then, Fidesz has maintained its parliamentary dominance, consolidating power through legal and institutional reforms that have curtailed checks and balances. The rise of right-wing populist parties is not unique to Hungary; similar trends have been observed in countries such as Poland and Turkey, where governments employ nationalist rhetoric and executive centralization to maintain their grip on power (Brubaker, 2017).

The Orbán regime exhibits several characteristics commonly associated with populist governance. Its social policy reforms reflect a blend of ideological influences, including neoliberalism, neoconservatism, and Étatism (Bartha et al., 2020; Brubaker, 2017). The policy-making process has often bypassed traditional institutional mechanisms, with laws passed through expedited procedures that limit parliamentary debate and public consultation (Bartha et al., 2020). Additionally, the government has employed a discursive governance strategy that uses emotionally charged language to shape public discourse and reinforce

ideological objectives. This rhetoric frequently relies on moralizing narratives, portraying political opposition, migration, and gender issues as existential threats (Bartha et al., 2020).

One of the central narratives promoted by the government is that of the "demographic crisis," which is intertwined with broader nationalist and conservative themes. The government attributes population decline to liberal policies and external threats, such as migration and "gender ideology," positioning itself as the defender of traditional family values (Herke, 2021). This framing is amplified through state-controlled media and national consultations—public opinion campaigns that present leading questions designed to reinforce government narratives. These consultations serve to generate moral panic by constructing social issues as crises requiring urgent intervention (Sik, 2016).

A cornerstone of the Orbán government's agenda is its pronatalist policy, which promotes traditional family structures and portrays childbearing as a patriotic duty. This policy framework includes financial incentives such as tax benefits, subsidized loans, and housing grants for large families. However, critics argue that these measures disproportionately benefit middle- and upper-class families while offering limited support to marginalized groups, such as low-income households and single parents (Bauer, 2022). The focus on increasing birth rates among the ethnic majority further underscores the exclusionary dimension of these policies.

2.2. MAR Regulation

The regulation of MAR in Hungary dates back to 1981. The initial legal framework restricted access to artificial insemination to women under 45 who were married, Hungarian citizens, had permanent residency, were legally competent, and possessed medical confirmation of infertility (Szalma & Sipos, 2024). These restrictive conditions reflected a heteronormative and exclusionary approach, which has continued to shape MAR policies in subsequent decades.

A major shift occurred in the late 1990s when cohabiting heterosexual couples were granted access to MAR services, eliminating the marriage requirement. This period also marked the first steps toward financing assisted reproduction beyond the public healthcare system (Szalma & Sipos, 2024). Further reforms in the mid-2000s extended access to single women under 45, but lesbian couples in registered partnerships remained excluded. To access treatment, lesbian couples had to conceal their relationship, ensuring that only one partner had a legal connection to the child (Szalma & Sipos, 2024).

Since 2010, in alignment with its pronatalist agenda, the Orbán government has enacted major regulatory changes that have reshaped MAR accessibility. One of the most significant shifts occurred in 2020, when the government nationalized fertility clinics, transferring most facilities to state ownership and introducing state-funded support for treatments and medications (Szalma, 2021). The official justification for this move cited Hungary's demographic challenges, framing the expansion of state control as a necessary intervention to address declining birth rates. However, critics argue that these reforms were driven by ideological motives, particularly the aim to limit access to non-heteronormative families while reinforcing a nationalist vision of reproduction (Szalma, 2021).

Currently, Hungary has twelve fertility centers, with seven located in Budapest and five in major provincial cities. However, the absence of facilities in northeastern Hungary, a region characterized by higher poverty rates in comparison with other areas (Hungarian Central Statistical Office, 2024), creates significant accessibility barriers, particularly for lower-income populations (Szekulesz, 2022). While nationalization has increased the government's control over MAR services, it has also reinforced a selective approach to reproduction. By consolidating MAR within state institutions, the government has ensured that access aligns with its broader nationalist and pronatalist objectives, effectively marginalizing those who do not conform to its vision of the ideal family structure. This process of nationalizing fertility clinics and centralizing reproductive services can be interpreted through Michel Foucault's concept of biopolitics. By taking direct control over institutions that govern reproduction, the Hungarian state exercises what Foucault called "biopower"—the strategic use of medical, legal, and institutional mechanisms to regulate bodies and populations. Fertility thus becomes not only a private matter but a political one, where access to reproductive technologies is differentially distributed based on ideological conformity to state-defined norms (Foucault, 1978). Yet, despite this centralized biopolitical control, resistance persists. Many Hungarians dissatisfied with the restrictive state-funded assisted reproduction system seek services abroad, with clinics in the Czech Republic attracting significant cross-border demand from Hungary and neighbouring countries for a variety of reasons (Burcin et al., 2020). This form of reproductive mobility highlights how individuals in some cases navigate around state-imposed constraints, reclaiming a degree of autonomy in a context of ideologically conditioned access.

3. Theoretical Considerations

In an era of declining birth rates and shifting demographic landscapes, pronatalism—a social and political stance advocating for higher birth rates—has gained renewed attention. While pronatalist policies often emphasize universal incentives to address demographic challenges, a more exclusionary variant has emerged: nativism. Rooted in nationalism and xenophobia (Mudde, 2007), nativism asserts that a nation's survival depends exclusively on the reproduction of its "native" population (Ennser-Jedenastik, 2021). This ideology is particularly salient among right-wing parties, which deploy nationalist narratives to frame demographic sustainability as inseparable from racial and cultural homogeneity, often positioning women's reproductive roles as central to defending the nation against perceived threats of migration and "cultural dilution" (Norocel, 2023, p. 291). This manifests in policies that frame migration as a demographic and cultural threat, redistributing state resources to incentivize childbirth among "native" groups while opposing immigration from populations deemed incompatible with nationalist ideals (Geva & Santos, 2021). However, MAR plays a crucial role in the pronatalist discourse, expanding reproductive possibilities for individuals and couples seeking to build families (Korolczuk, 2021).

At first glance, it might seem that pronatalism always supports the use of MAR. However, this is not always the case, as in many instances, the state restricts access to MAR for certain groups, revealing underlying social or economic biases that shape who is deemed eligible for support in their path to parenthood (Compans & Zagel, 2025). In certain Central and Eastern European countries, such as Hungary and Poland, same-sex couples' access to MAR is explicitly part of a broader "selective patriotic pronatalist" agenda, which means that the reproduction of certain social groups is prioritized over others in a context where reproduction is viewed as a patriotic or national responsibility (Szalma & Takács, 2025). Ji-Young (2024) argues that MAR, while often framed as a tool for individual reproductive autonomy, is increasingly being

co-opted by nation-states to address demographic anxieties related to declining fertility rates. She distinguishes between two types of pronatalism: Individualized pronatalism refers to a personal or individual desire to have children, while institutionalized pronatalism, which refers to state-level policies and ideologies that encourage or incentivize population growth, often for economic, nationalistic, or demographic reasons. Institutionalized pronatalism is characterized by actionable policies, such as state-funded in-vitro fertilization programmes, and is often justified by fears of demographic decline. While both individual and institutional pronatalism share the goal of encouraging procreation, their underlying motivations may vary. A relevant example is Israel's state-funded universal coverage of MAR treatments, which is driven by ethno-nationalist objectives to maintain a Jewish demographic majority in response to perceived demographic threats from Palestinian populations (Ji-Young, 2024). Similarly, in Bulgaria, political elites and media narratives frame higher fertility rates among the Roma minority as a demographic threat to the "ethnic core" of the nation, leading to exclusionary policies that stigmatize minority reproduction while valorising ethnic Bulgarian childbearing (Kotzeva & Dimitrova, 2014).

3.1. The Declining Population Narrative

Demographic decline has become a potent narrative underpinning institutionalized pronatalism, often framed as an existential crisis demanding urgent policy intervention. The fear of population decline is far from a novel concern in Hungary, with state efforts to counteract demographic stagnation stretching back to the 1950s. Long before contemporary pronatalist policies gained global attention, Hungarian authorities implemented measures—from restricting abortion access to offering financial incentives for larger families, reflecting a persistent anxiety over low birth rates (Vukovich, 1991). This anxiety has been rearticulated under right-wing populist governance, framing demographic decline as a civilizational threat tied to the erosion of heteronormative family structures and national identity (Rasmussen, 2023).

3.2. Endorsing Traditional Gender Roles

Heteroactivism plays a central role in right-wing populist movements, which utilize it to defend traditional family values, particularly heterosexual marriage and childbearing (Rasmussen, 2023). These movements frame feminist, LGBTQ+, and gender equality movements as threats to established societal norms. Notably, populist radical-right parties often selectively instrumentalize gender equality rhetoric, portraying it as a tool to protect "native women" from perceived immigrant threats, while simultaneously upholding conservative gender roles and opposing feminist agendas domestically (Reinhardt et al., 2023). This strategy diverges regionally: while populists in Northwestern Europe increasingly weaponize gender equality and LGBTQ+ rights as markers of a "progressive" identity threatened by Islam, their counterparts in Central and Eastern Europe frame migration as incompatible with traditional family structures rooted in Christian-nationalist ideals (Brubaker, 2017).

Individuals who do not conform to prevailing reproductive norms, particularly same-sex couples, are often subject to social exclusion shaped by selective and nationalist pronatalist ideologies (Szalma & Takács, 2025). In countries with selective patriotic pronatalism, where reproduction is ideologically linked to a perceived national ideal, same-sex parenting is frequently framed as problematic. Notably, restrictive MAR policies targeting same-sex couples in Central and Eastern Europe often persist despite growing societal acceptance of LGBTQ+ parenthood, reflecting a disconnect between public attitudes and legislative priorities (Compans

& Zagel, 2025). In such contexts, LGBTQ+ individuals are both excluded from parenthood and blamed for demographic challenges (Szalma & Takács, 2025).

In this framework, heteroactivism becomes a reactionary force, positioning the preservation of traditional family structures as vital to safeguarding the nation's future. The defence of these values is framed as a response to fears surrounding demographic change and the erosion of heteronormative structures (Rasmussen, 2023). By linking heteronormativity to concerns about national identity, these movements argue that immigration poses a threat to native populations and national culture (Rasmussen, 2023). Traditional gender roles are further entrenched by the carefare regime, which disproportionately reallocates care responsibilities onto women, combining unpaid domestic labour with low-wage work. Within this political framework, gender equality measures are rejected, and care work is sentimentalized as a "natural" female duty (Fodor, 2022).

3.3. Voluntary Childlessness and the Limits of Reproductive Autonomy

The integration of MAR into state-led pronatalist agendas often raises concerns about reproductive autonomy. While MAR is intended to expand reproductive choices, in practice, its state-driven implementation may inadvertently restrict individual freedom, particularly for women. Policies that encourage or pressure women to have children can undermine their autonomy, making reproduction seem more like a national imperative than a personal choice. McCutcheon (2020) critiques how pronatalist frameworks conflate womanhood with motherhood, stigmatizing childless women as deviating from a biologically mandated role, which reinforces societal pressures to conform to traditional reproductive norms. Recent research highlights how pronatalist discourses in Europe, particularly in Central and Eastern Europe, link voluntary childlessness to cultural threats and anti-immigration sentiments, framing both as risks to national survival (Szalma & Heers, 2024). In this regard, medicalized pronatalism, which capitalizes on the cultural idealization of biological motherhood, often discourages alternatives to biological reproduction, such as adoption (Bajaj & Stade, 2023).

Thus, the intersection of MAR and pronatalism presents a paradox: while MAR can expand reproductive opportunities, its role in state-driven agendas often leads to selective access, reinforcing traditional gender roles and limiting reproductive freedom. The ideological forces embedded in these policies expose the underlying hierarchies that determine who is considered "worthy" of parenthood and who has access to these reproductive options.

3.4. Pronatalist Policies as Alternatives to Migration in Addressing Demographic Decline

In response to demographic decline, governments often reject mass immigration as unfeasible or politically unpopular, preferring instead to encourage higher fertility rates among the native population (Ji-Young, 2024). For instance, since 2010, the Hungarian government has prioritized domestic strategies to address the demographic crisis, concurrently adopting a firm stance against immigration (Szalma & Takács, 2025). The prime minister of Hungary, Viktor Orbán emphasizes that Hungary's solution to demographic challenges lies in increasing the birthrate of native children, rather than relying on immigration to fill the population gap (Rasmussen, 2023). In Hungary, policies such as the Family Protection Action Plan—including generous housing subsidies (CSOK), baby bonds, and the "baby-expecting loan"—illustrate how pro-natalist campaigns

are tied to nationalist rhetoric and restrictive immigration policies. These programmes aim not simply to boost population numbers, but to increase the number of native-born citizens specifically (Rasmussen, 2023). Poland has adopted a similar approach, prioritizing pro-natalist policies like the Family 500+ child allowance to address population decline, while rejecting immigration in order to preserve ethnic homogeneity. While the universal cash benefit succeeded in halving child poverty and temporarily increasing fertility, it failed to raise birth rates sustainably above replacement level. Polish government rhetoric frames both low fertility and emigration as existential threats, linking demographic resilience to nationalist narratives and opposition to multiculturalism (Cook et al., 2023).

Beyond Europe, demographic policies in countries such as China, Singapore, Thailand, and South Korea are also closely linked to nationalist ideologies. These states typically resist altering the ethnic composition of their populations through migration and have only made limited relaxations to immigration policies, despite facing acute demographic challenges (Whittaker, 2022). Consequently, the responsibility to resolve demographic issues is placed primarily on native women, often generating resistance. In South Korea, for instance, the radical feminist 4B movement emerged as a response to patriarchal pronatalism, rejecting marriage and motherhood as acts of protest against state attempts to regulate women's reproductive roles (Ji-Young, 2024).

Although our data do not permit causal inference between political discourse and individual attitudes, our theoretical framework assumes that political discourses—especially those promoted by dominant populist actors—play an active role in shaping public opinion on reproductive issues. Drawing on the literature on discursive governance (Bartha et al., 2020) and moral panic (Sik, 2016), we conceptualize public attitudes as being both reflective of pre-existing normative structures and shaped by sustained political messaging. In other words, we understand attitudes toward MAR as co-constituted by individual-level predispositions and macro-level ideological narratives. This perspective helps explain the clustering of conservative views on gender, nationalism, and migration into a broader attitudinal syndrome (Rasmussen, 2023). Although our empirical analysis is conducted at the individual level using survey data, our theoretical approach remains attentive to the interplay between macro-level ideologies and micro-level opinions. We therefore understand individual attitudes not in isolation, but as embedded in and influenced by broader political and cultural structures.

4. Hypotheses

Our hypotheses stem from the theoretical framework that right-wing populists advocate for the traditional family structure, viewing it as the cornerstone for national reproduction.

Our first hypothesis is grounded in the assumption that those who perceive population decline as a national concern are more inclined to view reproduction as a public matter rather than a private decision, and thus support state-supported IVF programmes:

> H1a: Individuals who believe that childbearing is important due to Hungary's population decline are more likely to support IVF for heterosexual couples.

This may be because non-traditional families are perceived as incompatible with nationalist demographic goals.

Thus:

> H1b: Individuals who believe that childbearing is important due to Hungary's population decline are less likely to support IVF access for lesbian couples.

Our second hypothesis suggests that there may be an alignment of traditional gender values with the state's pronatalist agenda:

> H2a: Individuals who agree that the husband should prioritize work, while the wife should prioritize home and children, are more likely to support IVF for heterosexual couples.

We follow with the assumption that non-heteronormative families are viewed as a threat to traditional gender structures:

> H2b: Individuals who agree that the husband should prioritize work, while the wife should prioritize home and children are less likely to support IVF access for lesbian women.

Our third hypothesis rests on the idea that motherhood is perceived as a normative life path, reinforcing collective reproductive expectations:

> H3a: Individuals who agree that childbearing is necessary for a woman to live a full life are more likely to support IVF for heterosexual couples.

They may view non-traditional family forms as deviating from these normative gender roles:

> H3b: Individuals who agree that childbearing is necessary for a woman to live a full life are less likely to support IVF access for lesbian couples.

A fourth hypothesis reflects the belief that domestic pronatalist policies are the only acceptable demographic solution:

> H4a: Individuals who assess immigration as having a "negative impact" on counterbalancing population decline are more likely to support IVF for heterosexual couples.

This may stem from viewing non-traditional families as inconsistent with nationalist ideas about demographic preservation. Thus:

> H4b: Individuals who assess immigration as having a "negative impact" on counterbalancing population decline are less likely to support IVF access for lesbian couple

5. Data and Methods

The survey providing empirical data for our analysis was conducted between February and April 2024 by the Hungarian Academy of Sciences, Centre for Social Sciences, Lendület Research Group on Reproductive

Decision-Making, which designed and financed the study. The sample consisted of 1,506 participants, nationally representative in terms of age, gender, and settlement type, selected through a multistage stratified random sampling approach. In the first stage, settlements were stratified by county and settlement type (e.g., urban/rural) and selected using probability-proportional-to-size sampling to ensure proportional geographic representation. In the second stage, respondents within these settlements were chosen via simple random sampling, with participants contacted through address-based sampling to reach individuals at their registered residential addresses. Data collection was managed by Panelstory using a hybrid format: 66.9% (N = 1,008) of responses were gathered via an online questionnaire, while 33.1% (N = 498) were obtained through face-to-face interviews to ensure inclusion of individuals without internet access.

To enhance representativeness, post-stratification weights were applied using gender, age, education, and settlement type from Hungary's 2022 Census, adjusting for biases across 54 demographic cells. Final weights ranged from 0.320 to 3.695, aligning the dataset with Census benchmarks for adults aged 18 or more. After weighting, the sample became fully representative of Hungary's population across all four dimensions.

The study focused on reproductive decision-making, addressing topics such as abortion and its consequences, fertility treatments, and knowledge about adoption.

5.1. Variables and Methods

The first dependent variable measured general acceptance of IVF for different-sex couples, based on the question: "Do you consider in-vitro fertilization acceptable for heterosexual couples?"

Responses to this question were measured on a 4-point scale: 1 (*not acceptable at all*), 2 (*rather not acceptable*), 3 (*rather acceptable*), and 4 (*fully acceptable*). However, for the acceptance of lesbian participation in IVF procedures, only two response categories were possible: yes or no. Therefore, we decided to code this variable accordingly. Given the binary nature of the second dependent variable, we employed logistic regression for both outcomes to ensure consistency. The responses were recoded into binary variables for logistic regression in the case of the first dependent variable: *not acceptable* if the respondent selected 1 or 2, and *acceptable* if the respondent selected 3 or 4.

5.2. Explanatory Variables

We distinguish between explanatory and control variables based on whether they reflect theoretically grounded ideological dimensions or serve to adjust for demographic variation. At the heart of state rhetoric lies the imperative to reverse population decline. We measure alignment with this narrative using respondents' agreement with the statement: "Childbearing is important because Hungary's population is declining." Agreement with this statement was measured on a 1–5 Likert scale. The responses were recoded as follows: 1–2 = *not important*, 3 = *neutral*, and 4–5 = *important*.

Hungary's pronatalism is inseparable from its emphasis on heteronormative family structures and rigid gender roles. We assess this dual dimension through two variables: "It is correct that the husband should prioritize work, while the wife should prioritize home and children, even if both of them are employed." and "Childbearing is necessary for a woman to live a full life." Both variables used a 5-point Likert scale (1 = *strongly disagree*,

2 = *rather disagree*, 3 = *neither agree nor disagree*, 4 = *rather agree*, 5 = *strongly agree*) with responses recoded into three categories.

In a society where childbearing is valorised as a civic duty, voluntary childlessness is often stigmatized. To gauge societal acceptance of this choice, we used the following item: "A woman can only live a full life if she has children." Agreement with this item was measured on a 5-point Likert scale (1 = *strongly disagree*, 2 = *rather disagree*, 3 = *neither agree nor disagree*, 4 = *rather agree*, 5 = *strongly agree*).

The Orbán government's rejection of immigration as a solution to population decline has polarized public opinion. We gauge this tension through respondents' evaluations of the statement: "How would you evaluate the potential impact of people moving to Hungary from other countries to counterbalance the country's population decline?" Responses were measured on a scale from 0 to 10 and recoded as follows: 0–3 were classified as *negative impact*, 4–6 as *neutral*, and 7–10 as *positive impact*.

5.3. Control Variables

In the analysis, we primarily considered socio-demographic variables as independent variables that may be relevant based on previous research. Gender reflects the uneven burdens of pronatalism. While state rhetoric frames childbearing as a collective duty, women disproportionately shoulder the material and social costs of reproduction. It was categorized into two groups (male = 1, female = 2). Age captures generational divides. Younger Hungarians, raised in an era of globalization and LGBTQ+ visibility, often diverge from older cohorts steeped in socialist-era pronatalism or post-transition conservatism. Age groups were divided into three categories: 18–39 years = 1, 40–59 years = 2, and 60 years or older = 3. Education level often serves as an indicator of exposure to progressive ideas. Individuals with higher education, particularly in urban areas, are more likely to engage with diverse perspectives on issues like reproductive rights. Educational attainment was categorized as follows: basic = 1 (primary school or vocational school without a diploma), secondary = 2 (high school diploma), and tertiary = 3 (university degree).

Religiosity often correlates with adherence to conservative ideologies that intertwine nationalism with traditional family values. This variable highlights how religious frameworks may reinforce pronatalist norms, positioning reproduction within traditional family structures as morally endorsed while marginalizing non-traditional family arrangements. For religiosity, the following categories were used: "I am religious, I follow the teachings of the church" = 1, "I am religious in my own way" = 2, "I cannot say whether I am religious" = 3, "I am not religious" = 4. Additionally, we considered whether the respondent had children (1 = yes, 2 = no) and their marital status (1 = married, 2 = living with a partner, 3 = not living with a partner).

Finally, we incorporated some attitude variables, including the importance of having children due to population decline, acceptance of voluntary childlessness, and acceptance of migration. The variables included in the analysis are presented in Table 1.

Table 1. Characteristics of the variables included in the analysis.

		N	%
Dependent variables			
Acceptance of IVF	Yes	1263	89.9
	No	142	10.1
Acceptance of IVF in case of lesbian woman	Yes	641	50.5
	No	626	49.4
Control variables			
Gender	Male	638	42.4
	Female	868	57.6
Age group	18–39	599	39.3
	40–59	549	36.5
	60+	364	24.2
Education	Primary	409	27.2
	Secondary	718	47.8
	Higher	376	25.0
Religion	I am religious and follow the teachings of the Church.	152	10.8
	I am religious in my own way.	628	44.6
	I can't say whether I am religious or not.	74	5.2
	I am not religious.	555	39.4
Have you had any children?	Yes	780	52
	No	719	48
Explanatory variables			
Childbearing is important because Hungary's population is declining	Disagree	328	22.2
	Neither disagree nor agree	393	26.6
	Agree	756	51.2
It is correct that the husband should prioritize work, while the wife should prioritize home and children, even if both of them are employed.	Disagree	525	36.2
	Neither agree nor disagree	369	25
	Agree	572	38.8
Childbearing is necessary for a woman to live a full life.	Disagree	301	20.5
	Neither agree nor disagree	251	17
	Agree	921	62.5
How would you assess the potential impact of people moving to Hungary from other countries to counterbalance the country's population decline?	Bad	973	66.4
	Neutral	150	10.2
	Good	343	23.4

Source: Own calculations based on the Childbearing Representative Survey of 2024.

5.4. Analytical Strategy

Logistic regression was chosen as the primary analytical method because it allows for the examination of binary outcomes (see Tables 2 and 3) while controlling for multiple independent variables. The analysis was

conducted in several steps, with socio-demographic variables included in the first model (A). In the second model (B), we add two explanatory variables: population decline and traditional attitudes. In Model C, we include the item "childbearing is necessary for a woman to live a full life." In the fourth model (D), we include migration attitudes. Finally, we ran the full model (E), which includes all the variables.

6. Results

6.1. Socio-Demographic Variables and Attitudes Toward IVF

Empirical findings demonstrate that socio-demographic variables significantly influence attitudes toward both IVF for heterosexual couples and IVF access for lesbian couples. Gender does not exhibit a significant relationship with either outcome, but age proves to be an important factor. Younger individuals exhibit less favourable views toward IVF for heterosexual couples compared to those over 60. However, attitudes toward lesbian access to IVF reveal more positive support among the youngest age group (and those aged 40–59) compared to older cohorts.

Education also plays a role, with individuals holding the lowest education levels showing the least support for lesbian access to IVF. In contrast, religiosity has a clearer effect: Religious individuals, particularly those adhering to church teachings, display more negative attitudes toward both IVF for heterosexual couples and lesbian access to IVF. Those who identify as religious but not strictly adhere to church teachings show more varied responses, particularly for IVF for heterosexual couples.

Marital status emerges as another significant factor: single individuals tend to be more supportive of IVF access for lesbians compared to married individuals.

6.2. Explanatory Variables and Attitudes Toward IVF

Similar to socio-demographic variables, we observe significant variation in how explanatory variables influence attitudes toward the two dependent variables. Individuals who either agree or remain neutral stance on the statement that having children is important due to Hungary's declining population are more likely to support IVF for heterosexual couples compared to those who disagree with this statement. This confirms H1a. Similar patterns have been observed in other pronatalist contexts such as Poland and Israel, where concerns about demographic decline correlate with support for fertility treatments among majority heterosexual populations (Cook et al., 2023; Ji-Young, 2024).

The opposite pattern is observed regarding the acceptance of lesbian couples' access to IVF: individuals who consider childbearing important for counteracting population decline are less supportive of lesbian access to IVF than those who do not view childbearing as important. This corresponds to H1b. This aligns with international findings highlighting that concerns about demographic sustainability are often tied to support for traditional, heteronormative family structures, excluding LGBTQ+ couples (Compans & Zagel, 2025; Szalma & Takács, 2025).

Those who agree that "the husband should prioritize work, while the wife should prioritize home and children" do not differ significantly from those who reject it in terms of IVF for heterosexual couples'

acceptance. Thus, we cannot accept H2a. This may be because more people agree with IVF acceptance than with traditional gender roles. However, in the case of lesbian access to IVF, we found a significant difference: Individuals who agree that "the husband should prioritize work, while the wife should prioritize home and children" are less supportive of lesbian access compared to those who do not. This supports H2b and reflects the theoretical argument that heteroactivism, central to right-wing populist movements, defends heteronormative family structures by framing non-traditional parenthood as a threat to national identity and demographic continuity. Similar trends have been documented in Central and Eastern Europe, where policy restrictions persist despite gradual shifts in public opinion toward more inclusive family models (Compans & Zagel, 2025).

As for the acceptance of voluntary childlessness, we found that those who agree that "childbearing is necessary for a woman to live a full life" have more favourable attitudes toward IVF for heterosexual couples than those who disagree. This strengthens H3a. In contrast, those who disagree with the idea that "childbearing is necessary for a woman to live a full life" are more supportive of lesbian access to IVF than those who agree. This pattern reflects the theoretical argument that pronatalist norms conflate womanhood with motherhood, valorising biological reproduction for heterosexual women while marginalizing non-normative family forms, including LGBTQ+ parenthood. This is in line with H3b. Findings correspond to broader critiques of medicalized pronatalism, which valorise biological reproduction within normative gender roles, often at the expense of inclusive reproductive rights (Bajaj & Stade, 2023).

The migration-related question also operated in an opposing manner in the two models. Those who assess immigration as having a "negative impact" (or neutral) on counterbalancing population decline are more supportive of IVF for heterosexual couples compared to those who believe that immigrants enrich Hungary. This is in accordance with H4a. An opposite pattern is also observed when examining lesbian access to IVF: Both those who assess immigration as having a "negative impact" on counterbalancing population decline and those who hold a neutral opinion tend to reject IVF access for lesbian couples, whereas those who believe that immigrants enrich the country are more supportive of such access. This division mirrors the theoretical argument that nationalist pronatalist agendas frame domestic fertility as a zero-sum alternative to immigration, incentivizing reproduction among "native" families while excluding non-heteronormative parenthood as incompatible with ethnocentric demographic goals. This strengthens H4b. These results mirror cross-national evidence showing how nationalist discourses oppose both immigration and non-traditional family formations as threats to cultural continuity (Ji-Young, 2024; Norocel, 2023).

Table 2. Logistic regression models on the acceptance of procedures related to acceptance of IVF for heterosexual couples.

Variables	IVF				
	Model A	Model B	Model C	Model D	Model E
Gender					
Male	1	1	1	1	1
Female	0.984 (0.936)	0.996 (0.987)	0.981 (0.925)	0.962 (0.846)	0.997 (0.989)

Table 2. (Cont.) Logistic regression models on the acceptance of procedures related to acceptance of IVF for heterosexual couples.

Variables	IVF				
	Model A	Model B	Model C	Model D	Model E
Age group					
18–39	0.477** (0.006)	0.502* (0.011)	0.479** (0.007)	0.530* (0.021)	0.532* (0.024)
40–59	0.667 (0.137)	0.678 (0.155)	0.666 (0.139)	0.709 (0.212)	0.721 (0.236)
60+	1	1	1	1	1
Educational level					
Primary	0.727 (0.163)	0.713 (0.141)	0.729 (0.172)	0.716 (0.151)	0.706 (0.138)
Secondary	1	1	1	1	1
Higher	1.553† (0.080)	1.551† (0.082)	1.552† (0.082)	1.524† (0.097)	1.583† (0.072)
Religion					
I am religious and follow the teachings of the church	0.206*** (0.000)	0.200*** (0.000)	0.198*** (0.000)	0.203*** (0.000)	0.202*** (0.000)
I am religious in my own way	0.466** (0.001)	0.449** (0.001)	0.446** (0.001)	0.437** (0.001)	0.450** (0.001)
I am not religious	1	1	1	1	1
I can't say whether I am religious or not.	0.462† (0.071)	0.443† (0.058)	0.431† (0.051)	0.469† (0.081)	0.510 (0.124)
Marital status					
Cohabiting	0.948 (0.850)	0.984 (0.956)	0.971 (0.916)	1.025 (0.928)	1.037 (0.897)
Married	1	1	1	1	1
Not cohabiting	0.808 (0.321)	0.845 (0.436)	0.844 (0.433)	0.898 (0.624)	0.915 (0.690)
Childbearing is important because Hungary's population is declining					
Disagree		1	1	1	1
Neither agree nor disagree		1.819* (0.025)	1.879* (0.023)	1.879* (0.023)	1.758† (0.058)
Agree		1.610* (0.037)	1.847* (0.015)	1.847* (0.015)	1.523 (0.142)
It is correct that the husband should prioritize work, while the wife should prioritize home and children, even if both of them are employed.					
Disagree			1.141 (0.628)	1.027 (0.924)	1.017 (0.952)
Neither agree nor disagree			0.705 (0.152)	0.548* (0.024)	0.617† (0.077)
Agree			1	1	1

Table 2. (Cont.) Logistic regression models on the acceptance of procedures related to acceptance of IVF for heterosexual couples.

Variables	IVF				
	Model A	Model B	Model C	Model D	Model E
Having children is necessary for a woman to live a fulfilling life.					
Disagree				1.238 (0.488)	1.191 (0.574)
Neither agree nor disagree				2.200** (0.007)	2.146* (0.010)
Agree				1	1
How would you assess the potential impact of people moving to Hungary from other countries to counterbalance the country's population decline?					
Bad					1.961** (0.002)
Neutral					3.0075** (0.009)
Good					1
Constant	29.416*** (0.000)	19.488*** (0.000)	21.038*** (0.000)	16.424*** (0.000)	6.794*** (0.000)
Pseudo R2	0.047	0.054	0.059	0.069	0.086
N	1,326	1,326	1,326	1,326	1,326

Note: The reported values are relative risk ratios and standard errors; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$.

Table 3. Logistic regression model of acceptance of IVF access for lesbian women.

Variables	Lesbian couples access				
	Model A	Model B	Model C	Model D	Model E
Gender					
Male	1	1	1	1	1
Female	0.948 (0.667)	0.933 (0.576)	0.918 (0.487)	0.928 (0.551)	0.938 (0.621)
Age group					
18–39	2.036*** (0.000)	1.910*** (0.000)	1.864*** (0.000)	1.783** (0.001)	1.770** (0.001)
40–59	1.635** (0.003)	1.582** (0.005)	1.579** (0.006)	1.548* (0.009)	1.506* (0.016)
60+	1	1	1	1	1

Table 3. (Cont.) Logistic regression model of acceptance of IVF access for lesbian women.

Variables	Lesbian couples access				
	Model A	Model B	Model C	Model D	Model E
Educational level					
Primary	0.710* (0.024)	0.700* (0.020)	0.719* (0.032)	0.725* (0.038)	0.747* (0.065)
Secondary	1	1	1	1	1
Higher	1.151 (0.332)	1.126 (0.418)	1.108 (0.485)	1.113 (0.470)	1.082 (0.603)
Religion					
I am religious and follow the teachings of the church	0.586* (0.014)	0.619* (0.028)	0.635** (0.038)	0.607* (0.025)	0.578* (0.016)
I am religious in my own way	1.125 (0.367)	1.175 (0.223)	1.185 (0.202)	1.201 (0.171)	1.197 (0.188)
I am not religious	1	1	1	1	1
I can't say whether I am religious or not.	2.546** (0.003)	2.606** (0.003)	2.554** (0.003)	2.395** (0.007)	2.335* (0.010)
Marital status					
Cohabiting	1.365† (0.064)	1.326† (0.095)	1.300 (0.123)	1.206 (0.278)	1.228 (0.243)
Married	1	1	1	1	1
Not cohabiting	1.346* (0.035)	1.344* (0.038)	1.325 (0.049)	1.255 (0.116)	1.183 (0.257)
Childbearing is important because Hungary's population is declining.					
Disagree		1	1	1	1
Neither agree nor disagree		0.854 (0.370)	0.930 (0.688)	1.109 (0.585)	0.975 (0.901)
Agree		0.582** (0.001)	0.682* (0.023)	0.906 (0.595)	0.752 (0.138)
It is correct that the husband should prioritize work, while the wife should prioritize home and children, even if both of them are employed.					
Disagree			0.833 (0.256)	0.937 (0.701)	0.880 (0.457)
Neither agree nor disagree			0.652** (0.006)	0.804 (0.182)	0.680* (0.023)
Agree			1	1	1
Having children is necessary for a woman to live a fulfilling life.					
Disagree				0.695† (0.097)	0.692 (0.101)
Neither agree nor disagree				0.472*** (0.000)	0.457*** (0.000)
Agree				1	1

Table 3. (Cont.) Logistic regression model of acceptance of IVF access for lesbian women.

Variables	Lesbian couples access				
	Model A	Model B	Model C	Model D	Model E
How would you assess the potential impact of people moving to Hungary from other countries to counterbalance the country's population decline?					
Bad					0.327*** (0.000)
Neutral					0.688* (0.05)
Good					1
Constant	0.593** (0.008)	0.847 (0.479)	0.965 (0.884)	1.259 (0.369)	3.456*** (0.000)
Pseudo R2	0.045	0.054	0.059	0.069	0.099
N	1,198	1,198	1,198	1,198	1,198

Note: The reported values are relative risk ratios and standard errors; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$.

7. Conclusion

This study aimed to explore how various social and political factors—such as traditional gender roles, the demographic crisis narrative, and migration policies—shape societal attitudes towards medically assisted reproduction, particularly lesbian couples' access to IVF. The findings confirm that political discourses and demographic concerns are closely linked to societal attitudes toward IVF and reproductive policies. Populist political parties often exploit societal anxieties about population decline, positioning the defence of traditional family models at the center of their political discourse, while rejecting non-heteronormative reproductive forms, such as IVF access for lesbian couples (Ji-Young, 2024; Rasmussen, 2023).

Concerns about the demographic crisis are particularly pronounced in Hungary, where the intertwining of national identity and population decline significantly influences reproductive policies. Right-wing populist parties, especially Fidesz, have long made the demographic crisis a central issue, emphasizing the need for traditional family models (Brubaker, 2017; Rasmussen, 2023). The study's findings support the idea that acceptance of traditional gender roles is closely associated with the rejection of IVF access for lesbian couples. This association aligns with the theoretical framework of the study, which suggests that political discourses often serve to protect heteronormative family models, contributing to the broader shaping of social norms (Rasmussen, 2023). In this context, populist rhetoric framing demographic decline as an existential threat is central to the creation of policies that protect these family structures (Norocel, 2023).

Moreover, the rejection of lesbian couples' access to reproductive technologies in Hungary can be seen as part of a broader trend where demographic sustainability is framed as inherently tied to the reproduction of the "native" population, with selective pronatalism shaping who is considered eligible for reproductive support (Geva & Santos, 2021; Szalma et al., 2022). The study also reveals that those who view childbearing as essential for women's fulfilment in life tend to be more supportive of IVF, while those who do not share this view often reject it. This association is consistent with the theoretical approach to voluntary

childlessness and reproductive choices, which emphasizes the interaction between social norms and individual decisions (McCutcheon, 2020).

Attitudes towards migration also strongly influence IVF acceptance, particularly among those who perceive migration as detrimental to the nation. These attitudes are closely associated with general support for IVF, while access to IVF for lesbian couples is often rejected. This trend mirrors the nationalist political discourse that stresses the importance of native childbearing, as opposed to viewing migration as a potential solution to demographic challenges (Norocel, 2023; Szalma & Heers, 2024).

Socio-demographic factors—such as age, religiosity, and education—also play a significant role in shaping attitudes towards IVF. Older individuals and those with religious affiliations are generally more supportive of IVF for heterosexual couples, likely reflecting alignment with traditional family norms. However, younger generations tend to show higher levels of support for IVF access for lesbian couples, suggesting a generational divide in views on non-heteronormative parenthood. These social factors, along with the influence of political discourses, align with the theoretical framework that emphasizes how societal norms and political ideologies shape individual decisions and access to reproductive rights.

This study contributes to the understanding that individual attitudes should not be interpreted in isolation, but rather as part of a broader, mutually reinforcing conservative attitude syndrome. This syndrome encompasses support for traditional gender roles, affinity with nationalist discourse, and scepticism toward migration. These interconnected dimensions help explain why attitudes toward seemingly distinct social issues tend to align in consistent, ideologically coherent ways. It is also important to emphasize that while religiosity is generally associated with more conservative attitudes, the type of religiosity matters in shaping support for IVF. Our findings suggest that opposition to IVF—especially in the case of lesbian couples—is most pronounced among individuals who identify as religious and explicitly follow church teachings. In contrast, those with a religious identity but without doctrinal commitment exhibit greater attitudinal variation. This nuance may help explain the apparent tension between religiosity and support for IVF observed in different age cohorts.

These insights must be understood in the context of Hungary's political landscape. The government's increasingly hostile rhetoric and policy actions against LGBTQ+ individuals may further shape societal attitudes, particularly regarding reproductive access for same-sex couples (Szalma & Takács, 2025). Such discourse not only reinforces traditional family norms but may also legitimize exclusionary views within the broader public, thus influencing support for MAR access for lesbian women. While several findings echo regional patterns observed in other Central and Eastern European countries, such as the politicization of demographic concerns and the selective promotion of fertility (Cook et al., 2023; Kotzeva & Dimitrova, 2014), Hungary's extensive state control over MAR and its strong anti-immigration stance mark a particularly centralized and ideologically cohesive pronatalist regime. This makes the Hungarian case a key example of how reproductive autonomy can be constrained under nationalistic policy frameworks that valorise specific family models while marginalizing others.

Although this study adopts a framework in which policy discourse is seen as a key driver of public attitudes toward MAR, we also acknowledge several underlying assumptions. First, the direction of causality between discourse, policy, and opinion may be reciprocal and context-dependent. Second, although we treat

attitudes as separate constructs for analytical clarity, these are likely embedded in broader ideological patterns. Future studies employing latent class analysis or structural equation modelling could better capture these interrelations. Explicitly reflecting on these limitations strengthens our theoretical framing and points to promising avenues for future research.

Finally, the influence of political discourses and ideologies on reproductive policies and access regulation is of paramount importance. The study's results highlight that social and political discourses not only shape individual decisions but also affect the availability of public services, such as IVF. Segments of society that do not conform to the "required" reproductive models are often excluded from reproductive rights. This study offers a new perspective on understanding the relationship between reproductive policies and social norms, especially in examining the impact of pronatalist policies. Future research should further investigate the effects of medical pronatalism on reproductive autonomy, as well as its long-term social and political consequences, with particular attention to the interaction between political discourses and social norms.

Funding

The research conducted by the MTA TK Lendület "Momentum" Reproductive Sociology Research Group leading to these results has received funding from the Hungarian Academy of Sciences under Grant LENDULET_2021–78. Publication of this article in open access was made possible through the institutional membership agreement between the HUN-REN Centre for Social Sciences and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data that support the findings of this study are available from the authors upon request. The survey questionnaire used in this study is publicly available at: https://reprosoc.tk.hu/en/data

LLMs Disclosure

The authors utilised the subscription-based version of ChatGPT (OpenAI) to review the manuscript for grammar and style. ChatGPT was used exclusively for language editing and not for any other aspect of the manuscript.

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Social Inclusion
2025 • Volume 13 • Article 10403
https://doi.org/10.17645/si.10403

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Who Deserves to Reproduce? Latvian State Support for Infertility and Moral Considerations

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Submitted: 25 March 2025 **Accepted:** 27 June 2025 **Published:** 3 September 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

This article examines how access to state-funded infertility treatment in Latvia is regulated and morally framed. The analysis draws on state regulatory documents concerning sexual and reproductive health in Latvia, as well as six semi-structured interviews with Latvian politicians and reproductive health specialists. The findings reveal that eligibility for treatment is not based solely on biomedical criteria but is also shaped by normative assumptions about gender roles and moral worth. A dominant heteronormative framework positions women as central to reproduction, while men are often marginalised or excluded from state support. Furthermore, infertility treatment is described as a form of economic investment by the state, with an implicit expectation of demographic return. Importantly, reproductive health specialists and politicians do not present reproduction as a neutral or purely biological process, but rather frame it in moral terms, suggesting that there are specific, morally acceptable forms of reproduction.

Keywords

gender; heteronormativity; infertility; Latvia; morality; policy

1. Introduction

One might assume that having children is an entirely private and intimate process, far removed from state regulations. However, today, both the state and medical knowledge have become central forces in shaping kinship and restructuring human relationships (Ross & Moll, 2020, p. 2). As British social anthropologist Jeanette Edwards notes, "states are always invested in the (non)reproduction of their citizens and in regulating specific forms of family through which people should come into being" (Edwards, 2017, p. 155).

Reproductive studies encompass a wide range of topics, including infertility (Almeling, 2015, p. 424), where state involvement and medical knowledge both play important roles. There is extensive research on national policies concerning the diagnosis and treatment of infertility, as well as on how states regulate and fund these services (e.g., Calhaz-Jorge et al., 2020). In parallel, research is expanding on how doctors navigate the ethical and moral dilemmas that emerge with the globalisation of reproductive technologies (e.g., Gammeltoft, 2014).

In this article, I examine the state-funded fertility treatment program in Latvia. First, through an analysis of Latvia's regulatory documents, I explore how the legal framework of state-supported infertility treatment defines eligibility—who is included in state care, and conversely, who is excluded. Second, by analysing statements made by Latvian politicians and reproductive health specialists, I investigate how these actors articulate access to state-funded infertility treatment.

The analysis demonstrates that the dominant understanding of morally appropriate reproduction in Latvia aligns with a strongly heteronormative framework. Women are positioned at the center of reproductive processes, while men are often marginalised or excluded from state support structures. Both doctors and politicians tend to describe state-funded infertility treatment as a form of economic investment, where the state is seen as an investor expecting returns in the form of newborn citizens. Furthermore, discussions around infertility treatment extend beyond medically defined physical criteria. In the statements of doctors and politicians, it is often portrayed as something that should depend on certain moral qualities that individuals are expected to embody. This kind of rhetoric suggests that reproductive support is framed not only as a biomedical necessity but also as a matter of who is considered appropriate or deserving of state-funded care.

2. State Regulation and Moral Framing of Infertility Treatment

The regulation of infertility treatment across different countries varies significantly in both policy approach and moral framing. A growing body of comparative literature reveals that most countries employ mixed regulatory frameworks, combining liberal elements such as broad eligibility and state support, with restrictive features like social or medical limitations tied to relationship status, age, or sexual orientation (Brigham et al., 2013; Ginoza & Isasi, 2020; Thompson, 2021).

Studies highlight the distinction between liberal and conservative healthcare models. In liberal systems, infertility treatment is typically framed as a reproductive right and integrated into national health systems or public funding schemes. Access is broadly available, often underpinned by demographic concerns and pro-natalist policies, particularly evident in the Israeli context, where policies are among the most permissive globally (Birenbaum-Carmeli, 2004; Shalev & Gooldin, 2006). In contrast, conservative or mixed systems introduce eligibility restrictions based on moral or cultural norms, often leading to stratified access (Heidt-Forsythe, 2016; Waldman, 2006).

Key differences in regulation often reflect deeper moral and cultural values. For instance, in more conservative contexts, access to assisted reproductive technologies (ART) is shaped by heteronormative assumptions, religious values, and normative ideas about family and parenthood (Engeli & Allison, 2016; Thompson, 2021). These systems may exclude single women, same-sex couples, or older individuals based on implicit moral criteria, despite public funding availability (Brigham et al., 2013).

Even within mixed models, economic logic frequently intersects with moral framing. Policies may be designed not only to support individuals but also to serve state interests, such as promoting population growth or reinforcing national identity. For example, in Israel, ART policies are driven by a demographic imperative to increase the Jewish population, aligning both liberal access and cultural priorities (Birenbaum-Carmeli, 2004; Shalev & Gooldin, 2006). Moreover, financial models influence who can access care and under what conditions. Countries with fully public systems tend to offer broader access with fewer direct costs to patients, while mixed systems may create economic barriers, even if ART is legally available (Chambers et al., 2009; Dunn et al., 2014).

Finally, moral framing extends to how the state perceives its role in reproduction. In liberal models, the emphasis is often on compassion, autonomy, and reproductive rights. In conservative or mixed contexts, state involvement is more prescriptive, with policies reflecting concerns about social order, cultural continuity, or religious morality (Heidt-Forsythe, 2016; Waldman, 2006).

This article uses these theoretical perspectives to explore how Latvia's infertility policy combines medical criteria with moral reasoning, illustrating how broader norms about gender and reproduction shape access to treatment.

3. Methods

This article draws on an analysis of state regulatory documents regarding sexual and reproductive health, as well as six semi-structured interviews with politicians (3), reproductive health specialists (3) in Latvia. The following chapter outlines the data collection methods and the ethical considerations involved.

3.1. State Regulatory Documents

This study involved the analysis of laws and Cabinet of Ministers regulations that directly address sexual and reproductive health—specifically infertility, its treatment, and the use of medically assisted reproduction (MAR)—as well as broader legislation and regulatory acts relevant to the overall legal and policy framework. The documents analysed included primary legislation such as the Constitution of the Republic of Latvia (Satversmes Sapulce, 1922), the Civil Law (Ministru kabinets, 1937), and the Law on Sexual and Reproductive Health (Saeima, 2002). Cabinet of Ministers regulations included: No. 716, *Procedures for the Organization of Medically Assisted Reproduction and the Establishment of the Register of Infertile Families, the Medically Assisted Reproduction Register, the Unified Gamete Donor Register, and Gamete Donor Banks* (Ministru kabinets, 2003); and No. 1529, *Procedures for the Organization and Financing of Health Care* (Ministru kabinets, 2013). In addition, the policy planning document, Family State Policy Guidelines for 2011–2017 (Labklājības ministrija, 2011), was analyzed. The documents were collected between July and December 2020. A follow-up review was conducted in May 2025 to identify any changes that may have occurred since the original research was carried out in 2020.

3.2. Semi-Structured Interviews

Six semi-structured interviews were conducted between July 17 and December 10, 2020. Due to the medical dimension of the topic, three semi-structured interviews were conducted with reproductive

health specialists: two gynecologists specializing in reproductive medicine and one urologist-andrologist. These doctors were representing two private infertility clinics, out of a total of six in the country, that provide state-funded infertility treatment. Purposive sampling was used to identify relevant actors based on their expertise and institutional role, while convenience sampling determined the final selection based on accessibility.

Interviews were also conducted with three politicians whose work over the past decade in Latvia has been related to sexual and reproductive health policy. First, Anda Čakša represents the centre-right political party New Unity, and from 2016 to 2019, she served as Minister of Health. Second, Linda Ozola, representing the New Conservative Party in the 2020 extraordinary Riga City Council elections, was nominated as the party's lead candidate and became Deputy Chairperson of the Riga City Council. During the pre-election period, the party's published programme pledged that the Riga City Council budget would co-finance an infertility treatment programme for Riga residents and that the age limit for accessing the service would be increased from 37 to 40 years. In 2025, during the next municipal elections, Latvian journalists evaluated the promises made by politicians in 2020. As journalist Evita Puriņa (editor of *Re:Check*) noted, this promise had not been fulfilled (Puriņa, 2025). Politicians concluded that there was no need for additional municipal involvement, since the state was already funding and implementing these services. Third, Imants Parādnieks represents the national-conservative party National Alliance "All for Latvia!–For Fatherland and Freedom" (hereinafter referred to as the National Alliance VL–TB/LNNK) and is one of the most prominent politicians in Latvia working on demographic issues. During the 11th convocation of the Parliament of the Republic of Latvia, which commenced on 17 October 2011, Parādnieks chaired the Subcommittee on Demographic Affairs under the Budget and Finance (Taxation) Committee. Since 2016, he has been the head of the Demographic Affairs Centre. When the government of Krišjānis Kariņš took office in 2019, Parādnieks became the Prime Minister's advisor on demographic issues, a position he held until the end of the government's term in December 2022.

The interviews were conducted both remotely, using the Zoom platform, and in person, in compliance with the epidemiological regulations established in the country during the Covid-19 pandemic. The interviews lasted approximately one hour. All study participants were informed prior to the interview about the purpose of the research and how and where the collected data would be used. Verbal consent to participate in the study and to make an audio recording was obtained from all participants. All names, except those of public figures such as politicians, have been altered to ensure the anonymity of the individuals involved. On July 23, 2020, approval for conducting the study was granted by the Research Ethics Committee of Rīga Stradiņš University.

After the interviews, the audio recordings were manually transcribed in MS Word. Thematic analysis was carried out following a structured, multi-phase approach based on Kuckartz's model (Kuckartz, 2014). An initial reading of the material was performed, during which key passages were highlighted and memos were written. In the next phase, the main thematic categories were developed. This was followed by a first round of coding, during which the data were coded using the established categories. All text segments belonging to each category were then compiled, and sub-categories were developed inductively based on the content. In a second round of coding, the material was re-coded using this more detailed category system. The process concluded with a category-based analysis, and the results were presented accordingly.

4. Characterizing Infertility and State-funded Infertility Treatment in Latvia

According to WHO data, approximately one in every six people of reproductive age experiences infertility at some point in their lives (WHO, 2024). Globally, it is estimated that approximately 15% of heterosexual couples experience infertility, defined as the inability to conceive a child after one year of regular, unprotected sexual intercourse (Sharlip et al., 2002). While this percentage is widely cited in discussions of global infertility, it does not necessarily capture regional or national differences, where infertility rates may be higher or lower (Agarwal et al., 2015).

In Latvia, accurately determining the prevalence of infertility remains challenging. The policy planning document *Family State Policy Guidelines 2011–2017* (Labklājības ministrija, 2011) references a 2006 study conducted by the pharmaceutical company Organon, which, based on a survey of eleven doctors, estimated that there were approximately 15,000–20,000 infertile couples in the country. Data from the Latvian National Health Service (NHS) indicate a gradual increase in infertility among both women and men: from 4,075 women in 2011 to 8,238 in 2023, and from 103 men in 2011 to 468 in 2023 (Ķīvīte-Urtāne et al., 2023, p. 40). In contrast to the NHS data, the Organon study suggested that 60% of these cases in Latvia were attributed to male infertility (Ķīvīte-Urtāne et al., 2023, p. 40).

In Latvia, there is no single, unified national registry for infertility diagnoses or patients. But, according to Cabinet Regulation No. 716, *Procedures for the Organization of Medically Assisted Reproduction and the Establishment of the Register of Infertile Families, the Register of Medically Assisted Reproduction, the Unified Gamete Donor Register, and Gamete Donor Banks* (Ministru kabinets, 2003), the register of infertile persons is maintained at each medical institution where MAR is performed (Ķīvīte-Urtāne et al., 2023, p. 40).

4.1. State-Funded Infertility Treatment in Latvia

In Latvia, the beginnings of MAR can be traced back to the early 1990s, following the restoration of independence. A significant milestone occurred in 1995, when Voldemārs Lejiņš became the first gynaecologist in restored independent Latvia to successfully perform in vitro fertilization (IVF) at the Latvian Family Center, resulting in the birth of twins. Lejiņš was also one of the founders of EGV Clinic, which has since become one of the leading reproductive medicine centers in the country.

The next significant step occurred on September 1, 2012, when amendments to the Cabinet of Ministers' regulations, the *Procedures for the Organisation and Financing of Healthcare* (Ministru kabinets, 2013), introduced state budget coverage for both the diagnosis of infertility causes and MAR. In 2018, a centralized waiting list for these procedures was established to improve access to state-funded services by reducing waiting times and enhancing the transparency of information regarding the number of patients in the queue. Since the spring of 2022, the average waiting time for state-funded assisted reproduction services has been approximately one month.

Infertility treatment is organized within the private healthcare sector and is carried out in six institutions contracted by the NHS, which administers the state support programme. The national infertility treatment program states that, "in Latvia, state-funded infertility diagnostics and related healthcare services are available—including specialist consultations, diagnostic examinations, reimbursable medications, and more"

(Nacionālais veselības dienests, 2025). The MAR procedure is state-funded for women up to and including the age of 40 (Nacionālais veselības dienests, 2025). It should be noted that from the program's introduction in 2012 until 2022, this service was available to women up to and including the age of 37. The decision to raise the age limit was based on national demographic policy considerations, international experience, and the fact that the MAR service within the state program was particularly in demand among women aged 37 (Veselības ministrija, 2022). An analysis of the number of state-funded services provided up to 2020 reveals that the highest number of procedures was performed for women aged 37. It should also be noted that in Latvia, the average age at which a woman gives birth to her first child has increased since the program was established (25.9 years in 2011; 28.1 years in 2024; see Oficiālās statistikas portāls, 2025). In Europe, twenty-eight out of twenty-nine countries have set age limits for accessing state-funded fertility treatment, with the age range for women varying between 36 and 49 years, while the maximum age for men is rarely specified (Calhaz-Jorge et al., 2020).

The website of the NHS outlines the steps that must be taken to qualify for state-funded support (Nacionālais veselības dienests, 2025). Before undergoing a MAR procedure, diagnostic tests must be conducted to determine the causes of infertility and establish a diagnosis. If a patient wishes to receive these examinations funded by the state budget, they must consult a physician who has a contract with the state—specifically, with the NHS. Women should see a gynaecologist, while men should consult a urologist. A gynaecologist is considered a direct-access specialist, meaning no referral is needed. However, to see a urologist, a referral from a general practitioner is required. During the visit, the doctor examines the patient and, based on their health condition, determines the necessary tests to identify the causes of infertility and confirm the diagnosis. The doctor also assesses whether only the woman requires diagnostic testing or whether tests are also necessary for the male partner. For women, the following examinations may be performed to diagnose infertility: gynaecological examination, screening for sexually transmitted infections, hormonal evaluation, ultrasound examination (patient co-payment 4.00 EUR), and fallopian tube patency assessment (patient co-payment depends on the method used). For men, the following examinations may be performed: screening for sexually transmitted infections and sperm analysis (spermogram).

Once infertility has been diagnosed, the patient attends a consultation with a gynaecologist, during which the specialist may recommend MAR and place the patient on the centralized waiting list for the service (patient co-payment: 4.00 EUR). When the patient's turn on the waiting list is reached, the NHS sends an invitation to the patient's registered personal email address. Upon receiving the invitation, the following services are provided: pre-procedure gynaecologist consultation (4.00 EUR); ovarian stimulation medications; ovarian puncture for oocyte aspiration (including all necessary gynaecologist consultations, ultrasound examinations, anaesthesiologist consultation, day clinic use, and anaesthesia costs [21.00 EUR]); testicular biopsy (including urologist consultations and ultrasound examinations [21.00 EUR]); intracytoplasmic sperm injection (ICSI) with embryo culture up to day five, or intrauterine insemination with sperm and embryo culture up to day five; embryo freezing (up to five straws) and thawing; embryo transfer (21.00 EUR); post-procedure consultation (4.00 EUR); and ultrasound examination in weeks 4–6 after embryo transfer. The long-term storage of frozen embryos is not covered by the state. The acquisition of donor gametes is not covered by the state and must be paid for by the patient; however, the MAR procedure may still be state-funded if eligibility criteria are met.

A woman is removed from the waiting list if: she has reached the age of 41; she declines MAR; she does not visit a medical institution to undergo the procedure within six months of receiving the invitation; MAR is no longer necessary or is not possible due to medical indications. MAR is not funded by the state in the following cases: (a) if two unsuccessful MAR procedures have already been funded by the state (i.e., no clinically confirmed pregnancy occurred after embryo transfer) and (b) for women over the age of 40, except in cases where ovarian stimulation with medication was initiated before the age of 41 and has been successful, and the MAR process is continued up to the embryo transfer without freezing the embryo.

Standard local health insurance plans in Latvia generally exclude infertility treatments. Some insurance companies might cover co-payment of the state-covered MAR services.

Over the years, both the allocated funding and the number of births have increased in Latvia. Over a ten-year period, a total of 7,473,485.50 EUR has been allocated to this initiative. According to NHS data, starting from 2012, when state support began, and 2021, a total of 5,516 MAR procedures were performed, resulting in 2,165 births. Nevertheless, this data remains incomplete, as some individuals seek infertility treatment privately or do not turn to medical institutions at all. To grasp the larger picture, one can look at the newborn registry in the Health Statistics Database. Over 12 years (2010–2021), 3,451 births were recorded with a note indicating the use of IVF, ICSI, or intrauterine insemination (Veselības statistikas datubāze, n.d.). It is important to emphasize that not all uses of these technologies are related to infertility—MAR is also utilized by same-sex couples wishing to have children, and both state-funded and privately funded procedures are included.

It is analytically valuable to situate this aspect within a broader demographic context, particularly considering ongoing concerns about population decline and reproductive trends. The demographic situation in Latvia in 2025 indicates a continued population decline, primarily driven by low birth rates and high mortality. In 2024, a total of 12,571 newborns were registered in Latvia, which is 13.2% or 1,919 fewer than in 2023 (Oficiālās statistikas portāls, 2025). This represents the lowest number of births in the past 100 years. The total fertility rate in 2023 was 1.36, which is below the European Union average of 1.46 and significantly lower than the replacement level of 2.1–2.2 (Oficiālās statistikas portāls, 2025). Births following the use of MAR account for 0.8–2.5% of all births in Latvia each year (Ķīvīte-Urtāne et al., 2023, p. 41).

According to data provided by specialists from clinics in 2018, the success rate of MAR procedures in Latvia was 45%, referring to the number of children born as a result of these procedures (Nacionālais veselības dienests, 2019). Compared to other countries, such as the United Kingdom, this is considered a very high rate (Nacionālais veselības dienests, 2019). Doctors interviewed for this study also expressed a favourable view of the state program. One of the interviewed gynecologist-reproductologists commented: "It's [the program] very good. I would be truly happy if I could help even more couples." She explained that Latvia's high success rate can be attributed to several factors. A key element is the close cooperation between doctors and patients: "We always share our personal phone numbers." Clinics also can swiftly acquire the latest technologies without being hindered by complex bureaucratic procedures. Furthermore, continuous learning and the regular updating of professional knowledge allow medical practitioners to make decisions based on the most current global scientific evidence.

5. "It's More Complicated With Men": (Re)Producing Heteronormativity

When describing the clients of the clinic, one of the interviewed gynecologist-reproductologists explains that her clients include heterosexual women without partners and homosexual women, because "any woman has the right to want a child. It's more complicated with men." Why is it "more complicated with men"? And what does this reveal about who is considered eligible for state support in situations where reproduction requires both technological and state assistance? To answer these questions, this subsection examines how heteronormativity is embedded in legal regulations and the rhetoric of politicians and doctors when discussing the state-funded infertility treatment program.

Almeling, in her comprehensive article on reproduction research in the social sciences, concludes that "men are almost completely absent in research on reproduction, reinforcing the notion that this is a 'women's issue,'" (Almeling, 2015, p. 424). At the same time, Almeling, referring to Edin and Nelson (2013), argues that "only recently has this gap attracted sustained attention, with in-depth historical and qualitative studies on men's experiences of conception." The concept of "reproductive masculinity" was developed by Daniels (2006, pp. 6–7), encompassing "the associated cultural beliefs that men are secondary to reproduction, their bodies are invulnerable to reproductive harm, and they are far removed from the health problems of their children."

Heteronormativity—the assumption that heterosexuality is natural and superior to other forms of human sexuality—is embedded in the Latvia's Sexual and Reproductive Health Law (Saeima, 2002), where infertility is defined as "the inability of two opposite-sex individuals who have reached reproductive age to conceive a child within a year while engaging in regular sexual intercourse without contraception." This definition relates to that of the WHO, which defines infertility as a disease of the reproductive system in either a man or a woman, determined by the failure to conceive after twelve months or more of regular, unprotected sexual intercourse (WHO, 2024). This definition relies on the implicit assumption that such intercourse occurs between a cis-woman and a cis-man. The heteronormativity is also embedded in the way infertility diagnosis and treatment are covered by state budget funds for both women and men. Only women can be admitted to the queue for state-supported infertility treatment administered by the NHS (Nacionālais veselības dienests, 2025).

Heteronormativity is also evident in how access to MAR services in general is regulated in Latvia. Article 13, Section 2 of the Sexual and Reproductive Health Law states: "Medical fertilization is performed at the request of a heterosexual couple or a woman, based on a written application submitted to a medical institution by a heterosexual couple or a woman" (Saeima, 2002). The law prioritizes one form of sexuality but does not define a woman's sexual orientation or partnership status. As a result, this service is available in Latvia not only to heterosexual women but also to homosexual women and women without a partner.

A paradoxical fact emerges. On the one hand, it is impossible to register a same-sex marriage (civil unions were legalized in 2023, taking effect from July 2024) in Latvia, but on the other hand, MAR regulations allow, for example, same-sex female couples to have children. However, it is important to note that this regulation explicitly excludes not only homosexual men but also heterosexual men without a partner. This reproductive inequality is also pointed out by a gynecologist-reproductive specialist, whose quote opens this subsection. She confirmed her clinic serves both heterosexual women without partners and homosexual women:

Every woman is entitled to the desire for a child, but when it comes to men, the situation becomes more complex.

Why is it "more complicated with men"? What do the examples described above reveal about the way childbearing is perceived in Latvia? First, a woman not only has the "right to want a child" but can also practically realize this wish, whether alone or with a partner. Second, heterosexual men without a partner and homosexual men face greater difficulty in accessing infertility treatment and childbearing in general. Their reproductive desires cannot be fulfilled independently of a woman. Thus, men's position in reproduction can be described as secondary, subordinate, and unequal.

This asymmetry, as defined by Strathern, can be explained through historical perceptions of motherhood and fatherhood (Strathern, 1992, p. 148). Historically, in so-called Western societies, motherhood was considered a natural phenomenon, whereas fatherhood was viewed as social or cultural—in this sense, artificial. For a long time, it was believed that there was certainty about the former (with childbirth as proof) and internal uncertainty about the latter (paternity could only be assumed; see Strathern, 1992, p. 148).

Strathern refers to Sybil Wolfram, who, describing English law, notes that "a husband is presumed to be the father of any child born to his wife unless it can be proven that he is not the biological father" (Strathern, 1992, p. 148). A child's mother was considered the woman who gave birth, whereas a father was determined by his social bond (marriage) with the mother—"the mother is linked to the child, while the father is linked to the mother" (Strathern, 1992, p. 148). This principle is still present in Latvia. Article 146 of the Civil Law states that "the mother of a child is recognized as the woman who gave birth to the child" (Ministru kabinets, 1937), whereas the father is recognized as the man married to the woman who gave birth to the child.

Both the way the state defines men's and women's roles in reproduction align with research on fatherhood in Latvia. Studies have concluded that the core unit of a family, by default, consists of women and children, while men's involvement is subject to possible variability (Sedlenieks & Rolle, 2016, p. 3). That is, fathers are perceived as helpers or assistants rather than equal parents.

Heteronormativity is also part of the bigger picture in Latvia. The assumption that gender is binary and that the most appropriate type of relationship is between people of the opposite sex is reflected in Article 110 of the Latvian Constitution, which states: "The state protects and supports marriage—a union between a man and a woman" (Satversmes Sapulce, 1922).

Men in Latvia enter the state's sphere of attention and concern mainly once they become fathers. This is evidenced by various state regulations and initiatives by non-governmental organizations. Since 2023, each parent of a newborn in Latvia is required to take at least two months of parental leave. The main goal of this legislative measure is to involve both parents in the care of the child. Indirectly, this legislative change aims to increase fathers' involvement in the care of their children during the first months of the child's life. Since 2009, Father's Day has been celebrated on the second Sunday of September in Latvia. There are several non-governmental organizations in Latvia aimed at promoting fatherhood. For example, the Latvian organization "Tēvi" promotes active fatherhood by conducting research, raising public awareness, organizing support groups and educational activities for fathers, training professionals, and advocating for policy changes that strengthen the role of fathers in families and society (Tēvi, n.d.).

6. "The State is Interested in Paying to Get Results'": State Support for Infertility Treatment

"The state is interested in paying to get results," said one of the interviewed gynecologists-reproductologists, clearly indicating that the state's involvement in infertility treatment is driven by the logic of market economics. In this subsection, I examine how politicians and reproductive health specialists, when discussing infertility treatment and state support, articulate who can be included within the scope of state care.

6.1. The Logic of Market Economy

In several interviews with doctors and politicians, the logic of the market economy becomes evident: the state is framed as an investor allocating funds with the expectation of a return. In this context, the anticipated return is an increase in childbirth rates, which is seen as a means of ensuring the country's future economic growth. One of the interviewed gynecologists and reproductive health specialists explicitly refers to this economic rationale:

> You have to understand that this is a business at the national level. The state gives you money so that you can generate a return on that money for the state.

Similar views are expressed by politician Imants Parādnieks from the National Alliance VL-TB/LNNK party, who has long worked on demographic issues:

> There must be sufficient state support, investments. Let's put it this way: The economic logic is that each child born contributes approximately one million euros to our economy….If people want to have children, and the state provides support to help bring these children into the world, then no matter how much we invest—within reason, of course—it benefits the country's growth and economy.

Social anthropologist Mileiko (2018, p. 138) also points to the economic logic of fertility management in Latvia, concluding that the allocation of state budget funds for citizens' reproductive health legitimizes the state's authority to determine who qualifies for state support and who is excluded.

6.2. Body Mass Index

Fertility can be influenced by various factors, including a woman's body mass index (BMI). Studies show that a high BMI is positively correlated with fertility problems (Mena et al., 2020), while a low BMI can also negatively affect fertility (Foucaut et al., 2019). Both doctors and politicians who participated in the research acknowledged that, in the future, the state-defined criteria for women seeking state-funded infertility treatment could be expanded. They suggested that BMI should be included as an additional criterion, as both high and low BMI can negatively affect the chances of a successful pregnancy. One of the gynecologist-reproductologists expressed his concerns:

> Legally, I can't refuse her on that basis, but it's money wasted….The next step is that, legally, I should be able to say: "Dear girl, your BMI is completely off." You know what's interesting? When that girl adjusts her BMI, she gets pregnant. That's the issue. We need to say that we can't just hand out money.

A similar view was expressed by another interviewee, a gynecologist-reproductologist.

> There are only age limits, but no BMI restrictions….Honestly, we waste resources. These young women keep coming back again and again. The state process ends when the embryo is transferred. For a particular woman, we spend fifteen thousand euros….She knows—we've told her everything—that it won't work, but she has the legal right to demand: "Let's keep going, I pay taxes, after all." And we are paying for money to be thrown away.

Politician Imants Parādnieks, who has worked on demographic issues in Latvia for many years, emphasizes that BMI is not only about the physical condition of the person who wants to receive state support, but it also indicates a person's moral character.

> If a person is not willing to invest the effort to meet the minimum requirements—for example, regarding BMI, and I'm not saying everyone should look like a bundle of sticks—then the question arises: What kind of parent will this person be? If they behave irresponsibly toward their own body, we are only increasing the number of irresponsible parents. Do we need that? No, we don't. What we need are responsible people.

Parādnieks' statement suggests that body weight reflects a person's moral qualities and potentially indicates whether they can be a responsible parent. In this idealized vision, the state is composed of individuals who consciously care for their physical well-being and are thus capable of being responsible not only for themselves but also for their future children. It is through this responsible attitude—embodied in a well-maintained and disciplined body—that the state can continue to function successfully.

By discussing the need for additional eligibility criteria, doctors position themselves as responsible managers of state resources and as intermediaries between the state and individuals. Through their participation in the state-supported infertility treatment program, doctors actively implement the country's natalist policies. Social anthropologist Elīna Kursīte has examined ideas and practices related to childlessness in Latvia and concludes that a natalist ideology is present (Kursīte, 2014). According to her, this ideology is maintained through various state regulations and policy measures aimed at increasing the national birth rate.

6.3. Legal Status of a Relationship

Politician Imants Parādnieks also argues that not only a properly maintained body but also marriage—as a formalized relationship between two heterosexual individuals—is a morally appropriate foundation for responsible parenthood. As he states:

> It confirms that you are responsible to each other and to the child, so that the child has the best possible place—a family, where they can grow up to become a decent person.

In the context of infertility treatment, he sees marriage as serving several functions. First, it signals potentially responsible behavior in the creation and upbringing of children. Second, marriage allows the state to regard individuals as responsible partners in their relationship with the state, thereby justifying their inclusion within the state's sphere of care.

In some countries, in addition to gender, age, and diagnosis, relationship status is also a criterion for accessing state-funded MAR. For example, in Germany, only married heterosexual couples are eligible, and public health insurance only provides reimbursement for them (Milewski et al., 2025). This requirement is based on the idea of a "proper" family model in which a child should grow up in a family with two married biological parents. In Latvia, no such requirement exists. However, politician Imants Parādnieks supports the German approach. He believes that the state-defined union of individuals in the form of marriage is a mark of a responsible and upstanding person—someone who, by extension, can be expected to act responsibly when having children.

Overall, these statements from doctors and politicians about BMI and marriage as potential state criteria reveal the type of people they believe should receive support for having children. Beyond physical criteria, their remarks highlight a moral dimension—responsibility for one's body and partner.

7. Conclusion

Infertility—its diagnosis, treatment, and the broader use of medical technologies—serves as a lens through which to examine how morally acceptable reproductive processes are perceived in Latvia. It sheds light on who can (and cannot) be diagnosed with infertility, who qualifies (or does not qualify) for MAR, and who receives (or is denied) state support for infertility treatment, ultimately shaping the boundaries of inclusion and exclusion within the state's sphere of care.

It can be concluded that the way infertility is defined and state support for its treatment is structured, both in legal documents and in the statements of research participants (politicians and doctors), reflects the prevailing heteronormativity in reproductive matters. In Latvia, women are positioned as the primary managers of reproductive processes. Only a woman diagnosed with infertility can be placed on the waiting list for state-supported infertility treatment. Meanwhile, a man's health examinations and treatment are only possible in connection with a female partner, effectively making her the "gatekeeper" of reproductive processes.

The heteronormative framework embedded in state support programs not only excludes certain groups from state care (heterosexual men without partners and homosexual men) but also continues to concentrate reproductive responsibility on women. In contrast, men only enter the state's sphere of attention and concern once they become fathers. This is evidenced by various state regulations (such as amendments to the parental leave law) and initiatives by non-governmental organizations (such as events dedicated to fathers, support groups).

In everyday life, reproductive policies are maintained and implemented by private medical institutions. Clinic staff perceive themselves as responsible managers of both state resources and human bodies. By participating in the state-supported infertility treatment program, clinics act as intermediaries between the state and women, effectively forming a practical and symbolic agreement with the state regarding childbirth.

Both politicians and doctors in Latvia argue that it is not enough for children simply to be born. There is also an expectation that children should be conceived through a morally appropriate process and brought into a morally acceptable environment. The statements from doctors and politicians about BMI and marriage

as potential state criteria reveal the type of people they believe should receive support for having children. Beyond physical criteria, their remarks highlight a moral dimension—responsibility for one's body and partner. The research participants' responses suggest that, in an ideal scenario, the state should consist of people who consciously take care of their bodies, live in registered relationships, and are responsible not only for themselves but also for future generations, thereby contributing to a stable and morally grounded society.

Latvia's infertility policy combines biomedical eligibility with moral criteria shaped by heteronormative and demographic values. Viewed in a broader comparative perspective, this case shows how policies that appear inclusive on the surface can still produce unequal access through culturally embedded ideas about who is morally deserving of state-supported reproduction.

Acknowledgments

I am grateful to the anonymous reviewers for their insightful comments and suggestions, and to Ieva Puzo and Klāvs Sedlenieks for their support during the writing process.

Funding

This research was funded by the Latvian Council of Science under the Fundamental and Applied Research Project State Performance and Biosocial Relatedness (RELATE.LV), project No. lzp-2018/2–0070.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

Data that support the findings in this article are available from the author upon reasonable request.

LLMs Disclosure

ChatGPT (GPT-4) was used to refine the English language and improve readability. The intellectual content and interpretations remain entirely my own.

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Social Inclusion
2025 • Volume 13 • Article 10435
https://doi.org/10.17645/si.10435

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ARTICLE

Open Access Journal

Great Eggspectations: Narratives of Elective Oocyte Cryopreservation in Canadian Medical Journals

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Submitted: 29 March 2025 **Accepted:** 2 July 2025 **Published:** 3 September 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Also called oocyte cryopreservation or oocyte banking, "egg freezing" is an assisted reproductive procedure that allows people with ovaries to preserve oocytes for use in the future. "Medical egg freezing" has become established as a procedure for patients undergoing gonadotoxic chemotherapy or gynaecological surgery. In contrast, "social egg freezing" (SEF) is undertaken by patients with no current fertility issues in anticipation that they will be delaying childbearing. There is a sense that demand for SEF is growing, and it has been a rich case study for sociologists through lenses including medicalization theory, the nuclear family, intensive mothering, neoliberalism, ableism, and eugenics. Research presented in medical journals, recommendations made by clinical guidelines, and commentary and opinion pieces both reflect and shape the acceptability and availability of reproductive technologies. Therefore, the goal of this study was to explore narratives of SEF in Canadian medical journals and how these might shape medical perceptions of SEF. A qualitative, inductive content analysis of eight Canadian medical journal articles discussing SEF revealed key themes of "uncertainty," "ethical conflict," "age-related fertility decline," "extending fertility," and "technological advancement." A key finding of this study was that the boundaries between medical and social justifications for SEF are becoming blurred. On one hand, authors reframed SEF as a medical procedure indicated to manage age-related fertility decline (which is pathologized). On the other hand, authors upheld SEF as a potential solution to broad social problems, including delayed parenthood.

Keywords

Canada; content analysis; medical journals; medicine; social egg freezing

1. Introduction

Also called oocyte cryopreservation or oocyte banking, "egg freezing" is an assisted reproductive procedure that allows people with ovaries to preserve oocytes for use in the future. While "medical egg freezing" has a long history of being offered to patients undergoing gonadotoxic chemotherapy or gynaecological surgery, "social egg freezing" (SEF) is a more recent development. SEF is undertaken by patients with no current fertility issues in anticipation that they will be delaying childbearing. In other words, the goal of SEF is to sidestep age-related fertility decline.

In Canada, assisted reproduction regulations are developed, administered, and enforced by Health Canada under the Assisted Human Reproduction Act (Government of Canada, 2004). The AHRA does not specifically address elective egg freezing but does prohibit the purchase of oocytes and sets safety guidelines for the storage of oocytes. The availability of egg freezing has been greatly shaped by medical literature and professional associations. Beginning in 2013, several authorities in reproductive medicine—including the Canadian Fertility and Andrology Society (CFAS)—released position statements asserting they considered SEF to be a "well-established technique no longer considered to be experimental" (CFAS, 2014, p. 1). This was based on the development of vitrification, or "flash-freezing," which greatly increased frozen oocytes' chance of survival. For example, a 2021 American Society for Reproductive Medicine (ASRM) practice guideline found moderate evidence of no significant difference in pregnancy rates between fresh and frozen donor oocytes (49.8–60.9% for fresh donor oocytes, 50.2–63.2% for cryopreserved donor oocytes; Practice Committee of the American Society for Reproductive Medicine, 2021, p. 42).

Since this, elective oocyte cryopreservation has gained in momentum and popularity in Canada. Its rise, associated possibilities, and pitfalls have been chronicled in news media (see, e.g., Aziz, 2023; Braich et al., 2024; d'Oro, 2024; "The promise of egg freezing," 2019). In a 2012 study by Liu and Greenblatt, only nine clinics identified themselves as offering SEF. By 2021, one of the authors' graduate research (Michaud, 2021) found 26 clinics across Canada were now offering elective oocyte cryopreservation. Data presented by the Canadian Assisted Reproductive Technologies Register (CARTR) and the Better Outcomes Registry and Network (BORN) Ontario showed that, across Canada, there were 1758 oocyte retrieval cycles done for elective reasons in 2023 (CARTR-Plus & BORN Ontario, 2024)—a thirteen-fold increase from 2014 (CARTR-Plus & BORN Ontario, 2021). In comparison, 562 retrievals were completed for medical reasons in Canada in 2023 (CARTR-Plus & BORN Ontario, 2024).

Elective egg freezing is typically undergone in the same assisted reproductive technology clinics that treat infertile patients and provide in-vitro fertilization. It is paid for out-of-pocket by patients, as there is no provincial health plan coverage for this procedure. The *Canadian Medical Association Journal* (CMAJ) cites costs between 9000–17000 Canadian dollars per cycle, not including costs for storage (Gale et al., 2020).

There are a number of reasons for increased interest in egg freezing, but medical discourse—research presented in medical journals and at conferences, recommendations made by clinical guidelines, and commentary and opinion pieces—is key in shaping the accessibility and acceptability of egg freezing. For example, Stoop et al. (2014) argue in favour of reframing SEF as a preventative health intervention targeting "anticipated gamete exhaustion," which carries very different connotations from an "elective" procedure.

Clinics and clinicians, who ultimately act as gatekeepers to SEF, use medical literature in discussions with their patients. In addition, patients may research SEF using medical literature to inform their decision to forgo or proceed with SEF. Given this, the goal of this study was to explore narratives of SEF in Canadian medical journals. Our study was guided by the following research questions: How might narratives around SEF in Canadian medical journals shape medical perceptions of SEF? Which values or framings do these narratives prioritize?

2. Literature Review

SEF has been a rich case study for sociologists, who have tackled it with theoretical lenses ranging from medicalization theory to the nuclear family and intensive mothering, to neoliberalism, to ableism and eugenics. Based on international studies (see Inhorn, 2020), we know that the women turning to egg freezing are overwhelmingly highly educated, high-income professionals in their late thirties to early forties. In Canada, for example, 70% of oocyte retrievals for elective reasons occur in women between 35 and 40 years old (CARTR-Plus & BORN Ontario, 2024).

A number of qualitative studies have explored patients' reasons for undergoing SEF and their experiences freezing their eggs (see, e.g., Baldwin, 2019; Brown & Patrick, 2018; Carroll & Kroløkke, 2018; de Proost & Coene, 2022; de Proost et al., 2025; Inhorn et al., 2022; Myers, 2017; Zeno, 2022). The most common reason provided for egg freezing is generally the lack of a partner: either buying time to find the right person (Baldwin, 2019; Brown & Patrick, 2018; Carroll & Kroløkke, 2018) or being faced with the dissolution of a long-term relationship (Inhorn et al., 2022). Egg freezing may provide an opportunity to detangle biological, social, and emotional "timelines" and get back on course with an expected sequence of life events (Baldwin, 2019; Myers, 2017; van de Wiel, 2018; Waldby, 2019). Other authors note their participants' desire to accumulate life experience, financial stability, and a safe home before becoming mothers (Baldwin, 2019; Myers, 2017).

For some, increasing medical knowledge around reproduction provides more ways that women's bodies can "fail" at being fertile and conceiving, requiring heightened medical surveillance and intervention (Baldwin, 2019; Franklin & Ragoné, 1998). Authors have argued that with the advent of elective egg freezing, medicine has effectively created new "diagnoses" of "anticipated" (Martin, 2010) or "speculative" (van de Wiel, 2020) infertility. When anyone can (and will) become infertile at any moment, new responsibilities emerge to measure, manage, and optimize fertility through a plethora of new technologies (Baldwin, 2019; Martin, 2010; Myers, 2017). In some ways, this represents a continuation of "scientific motherhood" (Apple, 1995), a current which holds women morally responsible for the well-being of their families, yet expects them to engage and comply with expert scientific and medical advice.

Social scientists highlight that assisted reproductive technologies are more readily accepted when they assist or imitate "natural" reproduction (cf. Bühler, 2015; Franklin & Ragoné, 1998). Authors have explored representations of egg freezing across popular and news media (cf. Bhatia & Campo-Engelstein, 2018; Bühler, 2015; Campbell, 2011; Campo-Engelstein et al., 2018), professional association statements (Bhatia & Campo-Engelstein, 2018; Campo-Engelstein et al., 2018), and blogs (van de Wiel, 2018), and how these construct categories of acceptable and irresponsible types of technology-assisted motherhood.

Analysis of online information around SEF from medical clinics (for Australia, see Beilby et al., 2020; for the UK, see Gürtin & Tiemann, 2021; for Canada, see Liu & Greenblatt, 2012; Shao et al., 2020) has raised concerns around the lack of transparency regarding the medical risks and the "true" financial costs of SEF. There was marked ambiguity in how medical clinics defined and presented "successful" SEF, potentially leading to confusion for patients and clinicians. One factor is clinics' lack of their own data on live birth rates from frozen eggs and live birth rates from planned cryopreservation (Practice Committee of the American Society for Reproductive Medicine, 2021), given that very few women have returned to use them (Argyle et al., 2016; Beilby et al., 2020; Inhorn et al., 2022). In Canada, so far, only about 3% of women with frozen oocytes have thawed them for fertilization (CARTR-Plus & BORN Ontario, 2024).

Other than the analysis of fertility clinic websites, medicine's representations of SEF seem relatively understudied in the literature, and there were no studies on Canadian medical journals so far.

3. Methods

This qualitative content analysis examines how online Canadian medical journal articles represent SEF. Qualitative content analysis is a method used for the systematic analysis of social life through the close reading and coding of texts (Bernard, 2017; Hsieh & Shannon, 2005; Krippendorff, 2018). Content analysis moves beyond merely *describing* the content to study how topics are framed and the complex contexts in which they are read (Krippendorff, 2018).

3.1. Sample Characteristics

This study is based on eight online Canadian medical journal articles. Bibliographic details can be found in Table 1. Due to the narrow topic, the text corpus includes every article published on SEF in Canadian medical journals, as of June 2023. The date range was 2012–2021. Five of these were from the *Journal of Obstetrics and Gynecology Canada* (JOGC), two were from *CMAJ*, and one was from the *BC Medical Journal* (BCMJ). All articles were written in English. All were peer-reviewed articles. The sample including one commentary, one abstract, three articles, one clinical guideline, and two original research articles.

3.2. Inclusion/Exclusion Criteria

The main criterion for inclusion was a focus on elective egg freezing. Emily Michaud screened articles using their abstracts. For instance, four articles that discussed closely related topics of fertility decline, egg donation, and/or delayed parenthood, but did not mention SEF, were not analyzed.

3.3. Data Collection and Analysis

Data collection and analysis took place in June 2022. Based on her previous graduate research, author Emily Michaud used the search query "elective egg freezing" OR "social egg freezing" OR "elective fertility preservation" OR "elective oocyte cryopreservation" to retrieve articles from journal websites. She reviewed the journals' websites in June 2023 with the same query for any new publications to potentially add to the content analysis, with none found.

Table 1. Canadian medical journal articles included in content analysis.

Authors	Title	Journal	Year	Volume/Issue	Type
F. Baylis	*Left out in the cold: Arguments against non-medical oocyte cryopreservation*	JOGC	2015	37(1)	Commentary
L. Drost, S. Dason, C. Jones, J. Han, T. Doshi, A. Scheer, and E. Greenblatt	*Patients' and providers' perspectives on elective egg freezing decision-making: A needs assessment*	JOGC	2021	43(5)	Abstract
C. Dunne and J. Roberts	*SEF: A viable option for fertility preservation*	BCMJ	2016	58(10)	Article
J. Gale, A. A. Clancy, and P. Claman	*Elective egg freezing for age-related fertility decline*	CMAJ	2020	192(6)	"Practice" article
K. E. Liu and E. M. Greenblatt	*Oocyte cryopreservation in Canada: A survey of Canadian ART clinics*	JOGC	2012	34(3)	Research article
A. Petropanagos, A. Cattapan, F. Baylis, and A. Leader	*SEF: Risk, benefits and other considerations*	CMAJ	2015	187(9)	"Analysis" article
J. Saumet, A. Petropanagos, K. Buzaglo, E. McMahon, G. Warraich, and N. Mahutte	*No. 356-Egg freezing for age-related fertility decline*	JOGC	2018	40(3)	Clinical guideline
Y.-H. Shao, T. Tulandi, and H. A. Abenhaim	*Evaluating the quality and reliability of online information on social fertility preservation*	JOGC	2020	42(5)	Research article

Content analysis is "a set of methods for systematically coding and analyzing qualitative data" (Bernard, 2017, p. 321). Emily performed the content analysis, reading manuscripts closely and coding using NVivo 12 Pro. Codes emerged inductively during the coding and the author revisited, renamed, and re-hierarchized several times throughout this process, based on an evolving understanding of the data. Author Robin Oakley reviewed and provided input on the codebook.

3.4. Ethics

There was no Research Ethics Board approval required for this research, as it makes use of peer-reviewed articles available online.

4. Results

The full codebook can be found in the Supplementary File, including all themes, codes, and descriptions. Major themes, identified in nearly all articles, included "uncertainty," "ethical conflict," "age-related fertility decline," "extending fertility," and "technological innovation." This already conveys a sense of egg freezing

being a future-oriented procedure, full of ambiguities that blur the boundaries between social and medical indications of ART. Some other common codes were—in no particular order—"success depends on age," "physician role," "false hope," "no guarantees," and "women not using eggs."

4.1. The Blurring of the Social/Medical Divide

Journal articles generally differentiate "medical" egg freezing—for example, performed before gonadotoxic chemotherapy or gynecological surgery—from "social" egg freezing, requested by people with healthy ovaries. However, the medical risks of age-related fertility decline were often presented as a justification for freezing eggs at a younger age, blurring the social/medical divide. Many authors made use of statistics on infertility rates, measures of plummeting follicle and oocyte counts, reduced chance of conception with age, increased chance of abnormal embryos from older eggs at older ages, and increased medical risks for mother and baby.

In this way, normal age-related fertility decline became a medical problem that should trouble both physicians and patients. Some authors cautioned that patients may not even be aware of their dwindling fertility, framing delayed parenthood as a lifestyle issue requiring counselling. Dunne and Roberts (2016, p. 572) write:

> It is therefore incumbent on health care providers to educate women about the risks of advancing reproductive age and to ensure that patients are not "sleepwalking" into unintended childlessness. Women need to be made aware of the three main risks of delayed childbearing: infertility, aneuploidy, and miscarriage.

In line with the blurring of the medical and the social, articles that were targeted at a physician audience emphasized the holistic role of the physician in guiding patients wondering about SEF. There was an expectation that physicians engage with "the whole patient" and their social and emotional concerns, as well as potential ethical issues of SEF:

> Family physicians have a unique opportunity to assist women in accessing accurate and balanced information about their reproductive health. This information should be provided to all women who ask….Family physicians should frame discussions about this practice within the broader context of reproductive health and family-making to assist women in making informed choices. (Petropanagos et al., 2015)

> Prior to treatment, women considering social egg freezing should be counselled about the medical, physical, psychological, and financial aspects, and social risks/benefits of this technique and the alternatives listed above. (Saumet et al., 2018)

4.2. Facing Uncertainty With Optimization

Narratives around SEF reflected excitement around the development of oocyte cryopreservation. Authors described SEF as a "fast-changing technology" (Liu & Greenblatt, 2012, p. 254) and the advent of vitrification as "an exciting new frontier in reproductive medicine" (Dunne & Roberts, 2016, p. 573). This sense of innovation, however, existed in constant tension with uncertainty. In the interest of representing oocyte cryopreservation fairly, articles grappled with balancing the potential of the technology with its

limitations and available evidence. Articles were preoccupied with dispelling the myth of SEF being a guarantee or "fertility insurance policy." Freezing eggs may lead to other murky problems:

> There is the risk of basing future decisions/behaviour on the assumption that one's frozen eggs will ensure future fertility. Clearly, those eggs may or may not survive the thaw, they may or may not fertilize, and they may or may not produce viable embryos. (Saumet et al., 2018, p. 363)

Articles attempted to define an optimal outcome to SEF by providing algorithms for success based on age, cost, number of cycles, and oocytes frozen.

Authors cautioned that SEF could lead to false hope or a false sense of security in patients who are not fully informed about the uncertainties of this technology. One concern was that freezing eggs would require a cascade of further steps, or interventions, to be used, multiplying the costs, and the ambiguities. This is illustrated by Baylis (2015, p. 65):

> Oocyte preservation is at best a halfway technology….Oocytes in storage are of no personal value to a woman who wants to make a baby unless she chooses to reproduce using IVF. In many ways, therefore, consenting to oocyte cryopreservation is but a first step on the path to future IVF.

Along similar lines, six articles warned that many women have not returned to use their frozen eggs. Authors implied the procedure may be unnecessarily wasteful and/or risky unless banked oocytes lead to a pregnancy.

4.3. Progress in Service of Tradition

The articles analyzed generally did reaffirm—indirectly and directly—the importance to patients of having a healthy child who is biologically theirs. For example, Petropanagos et al. (2015) state: "Social egg freezing…provides [women] with the possibility of becoming a genetic parent using their frozen–thawed eggs, and it reduces the risk of having children with chromosomal abnormalities associated with ovarian aneuploidy" (p. 667). Genetic kinship and health were often grouped in these narratives, with SEF offered as a solution for both.

The same authors acknowledge that SEF "reinforces assumptions about the value of having genetically related children, which may not be of equal importance to all women" (Petropanagos et al., 2015, p. 668). However, these authors were in the minority. Few articles discussed alternate, non-biological mothering options such as adoption or using donor eggs.

Articles described broader Canadian demographic and social trends to contextualize increasing interest in SEF. Examples included Canadians choosing to start families later in life, experiencing conflicting timelines, being "forced to choose" between parenting and career, or feeling socially pressured to become mothers. While articles referenced these social issues to explain why SEF is in demand, progressive but non-medical solutions—such as policy changes to childcare or parental leave programs—were not suggested. The focus was generally on medical choices to be made by the informed and self-sufficient individual or couple. To be fair, discussion of social policy may have been outside the scope of medical journal articles.

5. Discussion

The key finding of this content analysis was that Canadian medical journal articles legitimized the use of a medical procedure in an otherwise-healthy population by framing it as a treatment for managing age-related fertility decline. The ticking biological clock is pathologized, providing a justification for SEF. In her 2010 paper, Martin referred to a clear delineation between representations of "medical" and "social" egg freezers in mainstream and scientific media. Our data suggests a possible evolution of this dichotomy, at least in this sample of Canadian medical literature. Here, SEF settles into an ambiguous position somewhere between medically necessary procedure and elective lifestyle decision. Fertile/infertile and pregnant/not pregnant divides become fractured. The focus on age-related fertility decline creates a sense of urgency to proactively seek out medical management.

Our data reflects ongoing tension between technological innovation and the creation of new uncertainties in the field of assisted reproduction. Excitement around the technical innovation of oocyte cryopreservation was also a feature of the website analyses performed by Beilby et al. (2020) and Gürtin and Tiemann (2021). These authors note that the language of technological progress creates an illusion of clarity while obfuscating information that could be helpful to patients and clinicians. In the articles we analyzed, it remained ambiguous at what point to call SEF a success, or indeed how to measure its success: Is it so based on the number of eggs frozen, on a successful pregnancy, or a successful live birth (which requires further treatment, including IVF)?

In line with the blurring of the medical and the social, articles emphasized the holistic role of the physician in guiding patients wondering about SEF. In the transition to "scientific motherhood" (Apple, 1995), women are held responsible for the well-being of their families, yet expected to engage and comply with expert scientific and medical advice. This is reflected in our data as well: Narratives around SEF implied that would-be mothers should be assuming responsibility for optimizing their biological clock, according to expert medical knowledge. This framing of fertility as something to be optimized creates new burdens (Baldwin, 2019). In our data, however, physicians were asked to allow information flow in the other direction—to engage with "the whole patient" and their social and emotional concerns. This represents somewhat of a departure and an attempt to de-medicalize the counselling encounter.

Authors have recently argued that SEF is a purely medical phenomenon and, therefore, that the term "SEF" should be retired (Hirsch et al., 2024). But what is medicine without social considerations? Our data reflects medical and ethical concerns around SEF as a "halfway technology" (Baylis, 2015)—that banked oocytes are valueless unless they result in a clinical pregnancy. On the contrary, in the literature, sociologists have provided compelling arguments that oocytes inherently have deeply personal value to the women who freeze them. As one example, oocytes embody "generational time" (Waldby, 2019): They are meaningful because they connect women with past generations through the genetic line, while carrying the potential for future children. Having oocytes banked provided the women in Baldwin's (2019) research with freedom in their lives and romantic relationships, even if their oocytes were never used.

Sociologists have argued that broader destabilization and de-traditionalization of the life course have set the stage for elective egg freezing. "Getting back on course" with an expected sequence of life events is a key factor in the decision to freeze oocytes (Baldwin, 2019; Brown & Patrick, 2018; Myers, 2017; van de Wiel, 2018; Waldby, 2019). The medical literature examined also frames the rise of SEF as due to a disconnect

between biological and social timelines. However, rather than opening up new trajectories for fertility and mothering, our data showed SEF being portrayed as a technology for restoring very traditional goals: biological kinship, able-bodied children, and the nuclear family. Medicine may perceive from this narrative that biological motherhood is the most acceptable to women who are considering freezing eggs (cf. Melhuus, 2012). Indeed, authors have previously shown how egg freezing, which enables "unnatural" motherhoods—such as post-menopausal or posthumous reproduction—or children with more than two parents, is vilified (Bühler, 2015; Campbell, 2011; Melhuus, 2012).

5.1. Limitations

This study is limited by the small number of articles available on the topic. In addition, while medical journals are convenient for textual analysis, clinicians obtain and share information through many other mediums, including online resources, conferences, teaching, textbooks, and in-person discussion. Given the small number of articles on SEF in Canadian journals, it is likely that Canadian clinicians also make use of US and European materials, which were excluded from this study. Furthermore, while it examines how SEF is being represented to and by physicians, this study cannot provide insight into how medical literature actually shapes the day-to-day reality of clinicians' practice.

To assume that these articles represent a single, inherent truth would be falling into the trap of textual determinism (Franklin & Ragoné, 1998). Content analysis data is always dependent on the author's interpretation. By allowing codes to emerge based on the data, we hoped to reduce the impact of any preconceived notions on our findings. While qualitative content analysis cannot exhaust all possible interpretations of the data, when done rigorously, it provides reliable data and has even been used in court cases (see Bernard, 2017).

SEF is still a relatively new development in the field of assisted reproduction, and there is still much unknown. The data collected represents a snapshot in time of medical discussion around SEF. We expect representations of egg freezing to continue to shift and evolve over time.

6. Conclusion

The goal of this study was to explore the values/framings of SEF contained in Canadian medical journals and how these might shape medical perception of SEF. The analysis of journal articles showed medical discourse frames so-called "social" egg freezing as a treatment for pathological age-related fertility decline. The articles reflect tension between a constant drive for optimization and the uncertainties of infertility—a tension which creates more and new uncertainties. Medical articles also framed SEF as one solution to broad social and demographic developments changing the course of parenthood. In expecting physicians to engage with "the whole patient" and their social constraints, the boundaries between medical and social infertility continue to blur. In terms of shaping perceptions and practices by medicine, these narratives could contribute to broadening the indications for egg freezing, and impact which patients could be seen as suitable candidates. This topic could benefit from future research into Canadian medical professionals' beliefs and practices around SEF, analysis of other types of medical media, or an anthropological study of patient–clinician encounters.

Acknowledgments

The authors thank the Research in Medicine Program at the Dalhousie Faculty of Medicine, as well as the Department of Sociology and Social Anthropology at Dalhousie University.

Funding

The authors wish to gratefully acknowledge financial support through the Dalhousie Faculty of Medicine's Ross Stuart Smith Research in Medicine Summer Studentship and Research in Medicine Knowledge Translation Fund.

Conflict of Interests

The authors declare no conflict of interest.

Data Availability

Data available from the corresponding author on request.

LLMs Disclosure

No LLMs were used throughout this project; specifically, no LLMs were used for data collection, data analysis, or in the preparation or editing of this manuscript.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2025 • Volume 13 • Article 10440
https://doi.org/10.17645/si.10440

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ARTICLE

Open Access Journal

The Discourse on Social Egg Freezing in Austria: Individual Solution to a Societal Problem

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Submitted: 29 March 2025 **Accepted:** 27 August 2025 **Published:** 25 September 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Social egg freezing (SEF) is the process of freezing a woman's eggs for non-medical reasons to preserve her ability to become pregnant in the future. SEF is both praised as a procedure that every woman should consider to prolong fertility, and criticized for medicalizing social problems, making unrealistic promises, trivializing risks, and having a poor cost–benefit ratio. This article explores the debate surrounding SEF and societal attitudes towards it in Austria, a country currently discussing the legalization of the procedure. Ten qualitative interviews were conducted with individuals involved in the public debate on medically assisted reproduction (MAR). Thematic analysis revealed three groups of respondents—advocates, ambivalents, and one opponent—who held different views on several key themes. All groups perceived SEF as not being "the" solution to the underlying problem of balancing parenthood and work. Interviewees demanded comprehensive counseling before SEF, including information about the technical procedure and medical risks. Many interviewees characterized the Austrian debate on MAR as polarized, describing policymakers as frequently uninformed and the political system as stagnant and reluctant to reform. They also expressed a need for more public debate in an open and dialogue-driven spirit. This article contributes to existing research by investigating the Austrian discourse on SEF, a topic that has rarely been explored. It shows that the regulation of SEF remains controversial in Austria, with attitudes towards it being based not only on the right to reproductive autonomy, but also on a wide range of broader social issues in contemporary societies.

Keywords

Austria; medically assisted reproduction; qualitative interviews; social egg freezing

1. Introduction

Medically assisted reproduction (MAR) has developed immensely, increasing the range of interventions and their potential impact on individuals, children, relationships, families, and society (Inhorn, 2020). Its regulation has changed in a European trend from restrictive to more permissive policies (Griessler, 2022). Differences between countries can be explained by cultural, political, and religious variance, among other factors (Präg & Mills, 2017).

Egg freezing (EF) involves "collecting, dehydrating, and freezing unfertilized eggs to store them for future pregnancy" (Espinosa-Herrera & Pietrini-Sánchez, 2025, p. 119) and was first successful in 1986 (Rimon-Zarfaty & Schicktanz, 2022). There were only a few births thereafter because the freezing method used was inefficient. The introduction of vitrification in 1999 and intracytoplasmic sperm injection improved success rates "dramatically" (De Proost et al., 2025, p. 2). The number of women undergoing social egg freezing (SEF) has increased in recent years. In Australia and New Zealand, for example, it increased from 252 to 981 between 2010 and 2015 (Johnston et al., 2021). Without providing absolute numbers, Johnston et al. (2021) report an 866% increase in patients in the USA from 2010 to 2016. SEF is global, with egg farms in "India, South Africa, Egypt, and United Arab Emirates" (De Proost & Coene, 2019, p. 367). Yet, little is known about the practice of SEF in these countries (De Proost & Coene, 2019; Lahoti et al., 2023; Rimon-Zarfaty et al., 2021; Rimon-Zarfaty & Schicktanz, 2022). EF is differentiated based on a debated distinction as *medical* and *social* egg freezing (MEF and SEF, respectively; De Proost et al., 2025; Rimon-Zarfaty et al., 2021). Medical reasons include cancer, autoimmune diseases, and endometriosis (Egarter, 2025). Non-medical reasons include lack of a suitable partner, career development, and economic factors (Katsani et al., 2024; Rimon-Zarfaty et al., 2021). SEF is suggested as a procedure that every woman should consider, but also criticized as over-promising, exploiting "a vulnerable group of women" with "unrealistic promises," trivializing risks, and "trying to solve societal problems by medicalizing" them (De Proost et al., 2025, p. 1).

In order to achieve a later pregnancy, SEF should be performed before the age of 35 or 37, as the quality and quantity of retrieved eggs decrease after this age (Alteri et al., 2019; Egarter, 2025, p. 28). Katsani et al. (2024, p. 5) state that the ideal age for oocyte freezing is between 20 and 30–35 years, indicating that today SEF is not only a last resort for potential pregnancies, but also a way to improve the chances of future pregnancy success (De Proost et al., 2025). Egg retrieval involves a vaginal ultrasound puncture after hormonal stimulation. The optimal number of eggs for future pregnancies is around 20. Thus, two or more cycles of stimulation and retrieval are often necessary (Egarter, 2025). The eggs collected can be used years after retrieval. SEF requires in vitro fertilization (IVF; Katsani et al., 2024). Related medical risks include complications from ovarian stimulation, such as ovarian hyperstimulation syndrome (OHSS), as well as complications from the egg retrieval process, such as bleeding, infection, and injury to surrounding organs. Mild cases of OHSS occur in 3–6%, and severe cases, which may require hospitalization, in approximately 0.5–1% of cases (Egarter, 2025). The risk of egg retrieval is very low at 1/1000 (Wunder, 2013, p. 3). Risks increase with more stimulation cycles (Espinosa-Herrera & Pietrini-Sánchez, 2025). The general risks of pregnancy and childbirth also increase with the age of the woman giving birth. Therefore, SEF may increase the risk of pregnancy and childbirth complications such as gestational diabetes mellitus, preeclampsia, and ectopic pregnancy (Egarter, 2025; Katsani et al., 2024).

Austria followed the European trend towards permissiveness in MAR slowly and reluctantly (Griessler & Winkler, 2022), but currently still prohibits SEF (Egarter, 2025). Today, SEF is banned in Hungary, Lithuania, Malta, Norway, Serbia, and Slovenia. While it is not banned in Bosnia-Herzegovina and Moldova, it has not been practiced there (Calhaz-Jorge et al., 2020, p. 9). Paragraph 2b of the Reproductive Medicine Act (FMedG, 1992) permits harvesting and storage of reproductive cells only for medical indications. Indications for MEF are mentioned in the IVF Fund Act (Kostenzer, 2020; Rimon-Zarfaty et al., 2021), the guidelines of the Austrian Society of Gynecology (OEGGG et al., 2017), and a recommendation of the Austrian Bioethics Commission (Bioethikkommission, 2015), an advisory body to the Federal Chancellor.

Recently, the current regulation has been subject to public and political debate. In 2023, the self-help group Zukunft Kinder! launched a parliamentary citizens' initiative to permit SEF (Parlament Österreich, 2025a, 2025b). The Bioethics Commission considered banning SEFs as inappropriate (Bioethikkommission, 2023), in contrast to a previous opinion (Bioethikkommission, 2015). The Health Ministry was open to discussing legalization (Bundesministerium Soziales, Gesundheit, Pflege und Konsumentenschutz, 2023); the Austrian IVF Society was in favor (Österreichische IVF Gesellschaft, n.d.); the NGO Aktion Leben disapproved of legalizing SEF (Aktion Leben, 2023). In 2023, the women's organization of the Austrian Social Democratic Party (SPÖ) also discussed legalizing SEF (SPÖ Frauen, 2023). In 2025, the Constitutional Court held a hearing on a case in which the applicant challenged the constitutionality of the ban, arguing that it violated her right to respect her private and family life under Article 8 of the European Convention on Human Rights (Constitutional Court, 2025).

This article explores themes of the Austrian discourse on SEF to gain a deeper understanding of how attitudes toward SEF are embedded in a broader societal context.

2. Method

The article is based on exploratory, qualitative interviews with ten individuals on their views on the legalization of SEF. The ten semi-structured interviews were inductively analyzed using thematic analysis (Froschauer & Lueger, 2003).

This study initially focused on the SPÖ's youth and women's organizations because they are currently debating the legalization of SEF. However, the organizations' representatives declined interview requests due to a lack of time and ongoing internal discussions. Thus, the selection criteria for purposive sampling were changed to include advocates and opponents of SEF who engage in public debates on MAR. In addition to the three female SPÖ members already interviewed, four activists from a feminist NGO that addresses the societal implications of MAR were recruited. Additionally, interviews were conducted with reproductive physicians (one female, one male) and an activist from another NGO. The sample includes four physicians, two journalists, two psychotherapists, one student, and one NGO employee. To protect anonymity, information about the sample is provided in aggregate form only.

During the winter of 2024–2025, the author recruited interviewees at three occasions: two public events on MAR and reproductive autonomy, and an information event on SEF for reproductive physicians. Two respondents were recruited through snowball sampling. The semi-structured interviews included open-ended questions about interviewees' views on SEF regulation, their position towards legalization, and

perceptions of arguments for and against legalizing SEF, the Austrian SEF discourse, and its participants. Follow-up questions were asked for clarification. After ten interviews, "theoretical saturation" was reached (Strübing, 2004, p. 32). The interviews averaged 44 minutes (range 31–77 minutes) and were conducted in person (n = 9) or online (n = 1) between January and March 2025, following the events. They were audio-recorded and transcribed verbatim. Informed consent was obtained prior to interviews.

The interviews were analysed using thematic analysis (Froschauer & Lueger, 2003). Analysis started with getting familiarized with the material and continued with open coding. A total of ninety-seven codes were generated and grouped into 14 key themes for comparative analysis with the help of the Atlas.ti software program.

3. Results

The interviews revealed three groups. Three interviewees advocated legalizing SEF ("advocates"), six presented arguments both for and against it ("ambivalents"), and one opposed it ("opponent").

From the advocates, I5 considered legalizing SEF an option and did not see any valid arguments against it. The fact that it is legal in other countries was an argument in favor. While SEF would have positive effects for some, I5 did not see it as "the" solution. Yet, it could help women cope with pressure and stress. I9 also referred to permissive countries and saw no reason why women should not be able to postpone reproduction if they wish. Although approving of SEF, I9 considered arguments against it "worth discussing." I10 believed it crucial to allow SEF but considered the current demand overestimated.

From the ambivalents, I2 questioned SEF, deeming it "bizarre," yet considered a ban too severe. I2 and I3 considered SEF as permissible. This is because it is the women themselves who would be undergoing the procedure. I3 acknowledged arguments in favor of SEF and the needs of women who wish to have children, however, warned about success rates. Several respondents believed that social sperm freezing is permitted in Austria. I6 also assumed this and considered it unfair, justifying her stance with this assumption. She favored legalization but would not promote SEF as a society. Instead, she would focus on enabling self-determined reproduction for as many women as possible. She wondered why women want to use SEF and why society partly forces them to do so. She would not recommend SEF. I7 was critical of SEF and advised to consider the implications and success rates. I8 was ambivalent due to the advantages, disadvantages, risks, and societal consequences of SEF. She described it as a life-changing decision that each individual must make for themselves. It requires non-directive information and counseling that considers their specific situation and reasons.

Opponent I4 opposed SEF because it could lead to uncontrollable developments and questioned SEF as a "good solution." She described SEF as a "resignative concept" that fails to solve the underlying social problem of reconciling work and childcare. She considered SEF not as a "healthy" solution, psychologically or health-wise, but as an individual solution to a societal problem.

3.1. Themes

3.1.1. Assessing MAR

Assessment of MAR and SEF were connected. Ambivalents and the opponent were critical of MAR. I1 recognized significant opportunities in MAR, but also potential abuse, as it would be big business. She thought that those with a strong desire to become parents may be willing to do almost anything without considering medical implications for themselves, their child, or broader socio-political consequences. She said she understood the desire for a child but strongly opposed the use of methods she considered medically and psychologically questionable. I1 talked about there being a huge number of children in the world who would need to be cared for. Thus, she considered MAR "totally inhuman" and SEF "selfish" because of the underlying idea that a child must be "one's own." She believed MAR is "incredibly dangerous" and worried that designer babies will be next.

I2 did not oppose MAR because she believed that interfering with the creation of life would be wrong. She considered MAR to be a useful medical tool that was sometimes successful. Yet, she criticized surrogacy and egg donation because the involvement of third parties requires ethical reflection on their rights. She was concerned about children's rights and critical that MAR no longer focuses on treating infertile couples, but on the desire for a child. She criticizes the market's focus on expansion and profit. I2 thought that MAR raises existential questions about motherhood, parenthood, raising children, the value placed on biological children, reproduction, and the meaning of life. I3 was critical of MAR and perceived many developments that do not benefit children and mothers in terms of psychological bonding and that violate human and children's rights. I7 believed that "good parenthood" and "good family relationships" are possible in all forms of MAR, with the exception of surrogacy, as long as they are made transparent to the child, are communicated to the child according to their age, and are dealt with emotionally. I4, the opponent examined and questioned the desire for a child, the reasons given for this desire, the explanations, the motives, the concrete situation of the couple, why pregnancy does not work, and what kind of desires and imaginations exist in the desire for a child. She described MAR as a big business of "getting a child at any cost" and emphasized the psychodynamics involved in MAR and parenting. She believed that the emotional implications of MAR are being neglected. Advocates, in contrast to the ambivalents and the opponent, perceived MAR simply as "scientific" and "technological progress" (I9).

3.1.2. Risks and Success

Respondents from all groups perceived medical risks associated with SEF, especially OHSS, and the actual chances of success. Advocates mentioned risks and inconveniences of egg retrieval, such as discomfort (I5), thrombosis (I9), and overstimulation, bleeding, and infection (I10). I6 considered SEF "a relatively major intervention in a woman's body, with side effects and risks." I7 noted that SEF does not guarantee a child. Furthermore, by the time the egg is used, the body will have aged and may not be as suitable for pregnancy as it was when the woman was younger. I8 was ambivalent and did not consider SEF to be very risky. However, since it involves ovarian stimulation and a needle, there is always a risk greater than zero. I4, the opponent, noted a lack of long-term studies on the medical risks of ovarian stimulation.

3.1.3. Autonomy

Autonomy was a key theme that each group perceived differently. I5, an advocate, offered a nuanced view: First, autonomy meant not being dependent on a partner. A woman in an unhappy relationship who wants to have a child can give up her desire for a child or leave her partner. Alternatively, she can have a child in an unhappy relationship. SEF increases autonomy because it enables women to postpone pregnancy and gives them time to find a suitable partner. Autonomy also meant increased independence from nature, as it prolongs the fertility phase. Third, it meant freedom to choose whether or not to have children or to remain undecided. Fourth, autonomy meant freedom from social expectations about having children. I5 believed that autonomy has limits when others or the child are at risk. Another advocate, I9, defined "reproductive autonomy" as the right to self-determination. Women who want to use SEF should be able to do so after receiving the necessary information. I10 believed that it is illegitimate for the state to intervene in something as personal as reproduction.

Ambivalent or opposed respondents perceived autonomy differently. I1 supported the right to self-determination but believed there are limits when it comes at the expense of others. I6 stated the goal should be to give reproductive autonomy to as many women as possible, not to allow as many women as possible to have SEF. I4, an opponent, did not consider reproductive autonomy a value in itself. Autonomy is central and non-negotiable, she said, in abortion. The concept of autonomy becomes misguided when reproduction is pursued at any cost, especially at the expense of others. Autonomy from the body and biology that I5 mentioned contrasted with acceptance of nature, biology, and aging that several ambivalents and the opponent advocated. I4 noted: "Biology is such that we get older. The older we get, the fewer eggs we can produce, and at some point, it's over."

3.1.4. Feasibility

Ambivalents questioned technological feasibility, which they perceived as central to MAR. For I2 feasibility implied that individuals are responsible for realizing their wishes. This creates tremendous pressure, and if someone does not succeed, they are considered to have failed. However, achieving goals also depends on circumstances, opportunities, resources, and luck, I2 emphasized. She expressed her empathy with those who are childless but criticized the idea that everything in life should be made possible, controlled, and planned. I2 advocated accepting the limits of having children and the resulting feelings of loss while remaining open to different potentials and possibilities. I3 criticized the concept of feasibility, which leads more and more people to believe that the desire for a child can be postponed indefinitely. I7 and I4 were critical of the idea of feasibility as well. I4 believed that it opens the door to designer babies, children of choice, and eugenics.

3.1.5. Wish for a Child

Several ambivalents and the opponent argued that MAR treats the desire for a child as absolute. I6 criticized the tendency to treat the desire for a child and "biological reproduction" as absolute, given the current difficulty of finding foster parents. She felt the discourse as slightly off, dominated by the question of "self-fulfillment" when wanting a child. She noted the absence of a discourse on whether society pressures women to have children, and that women who cannot have biological children are often viewed as inferior. I2 recognized the human rights to sexuality and to private and family life as important defenses against the state and as a means

to make independent decisions. However, she emphasized that almost no human right is absolute; it must always be weighed against others, such as children's rights, as all autonomy and civil liberties have limits when they restrict others' freedom. I8 was undecided about the right to have children and to use all technical means in reproduction. I4, an opponent, believed that there is no right to a child and questioned the importance of genetic parenthood when there are so many orphans. She suggested examining why a child is considered necessary for one's purpose in life. Children should not be used, she said, to fulfill a person's purpose in life. In contrast, I10, an advocate, questioned the state's right to regulate human reproduction and considered it a human and personal right. State regulation in this area encroaches on personal rights.

3.1.6. Right Moment

The right moment for a child was another theme and encompasses ideas about biography, career, partnership, and ambivalence about becoming a parent. Respondents from all groups argued that having children and a career is difficult (I9, I8, I4). I5, an advocate, believed the right time to have a child depends on individual circumstances, such as the vocational or financial situation. She considered arguments about the challenges of late pregnancy as valid. Nevertheless, she favored opening up the strict time limit.

Another motive for SEF, cited by interviewees of all groups, was the absence of a suitable partner (I5, I3, I8, I4). I5 referred to literature showing that issues with partners and uncertainty about the current life situation are main motivations for SEF. I8, an ambivalent, noted that women today are focusing more on equality in the workplace and their careers, which is causing them to delay starting a family. I4, an opponent, viewed SEF as a safety measure for having a child with the right partner in the future. She criticized a kind of "consumerism" in partnerships, partly due to the increased use of internet platforms. She described this as investing less effort into a relationship while wondering if a better partner can be found.

I4, the opponent, stated that the desire to have a child is always ambivalent and depends on one's biography, circumstances, and resources. She thought that having a child is one of life's most challenging decisions and called for a "mature desire for a child," which encompassed motives such as wanting to pass something on, protect, and be there for the child. This contrasts, she said, with the idea that life would be meaningless without a child. A child should not serve as a substitute for a lack of meaning in life. I7, an ambivalent, noted that ambivalence is a common part of pregnancy, even when planned, because pregnancy changes one's self-image and identity. This period requires leaving the former identity behind and developing a parental identity.

Interviewees of all groups used metaphors. A "biological clock" is often referred to "fertility" (I5) and the dilemma that SEF addresses (I4, I5, I9). The clock carries meanings of inevitability and external pressure. I5, an advocate, believed that popular media and movies convey this metaphor and create a sense of stress. SEF would reduce the psychological burden and social pressure on women who want to have children, are unsure about having children, or are unsure about the timing of having children. SEF would extend the time span of female fertility, thus reducing the stress of getting pregnant immediately (I5). SEF is not a guarantee, but it enables an extension of the time frame for having a child (I5).

Other images used were connected with economy, calculation, planning, and agency. I8 describes SEF as an "egg bank" to store eggs if later needed. Another ambivalent, I2, perceived SEF as part of a mindset involving feasibility, consumption, and security. I3, an ambivalent, noted that questions of consumer protection and

cost–benefit analysis should be raised because young women would see SEF as an insurance. I4, an opponent, likened SEF to a "security rucksack" for having a child "at some point, when I want to, whether I have a partner or not." I10 and I5, both advocates, described SEF as security or insurance.

3.1.7. Potential Pressure

Interviewees from all groups perceived potential pressure from employers on women to perform SEF. They referred to U.S. internet companies as examples (I2, I4, I5, I9, and I10). I6, an ambivalent, believed that such companies avoid the actual problem of balancing family and work. They, she said, reduce or eliminate the risk of female employees of reproductive age taking leave or being absent from work due to childcare responsibilities by covering SEF.

3.1.8. Commercialization

Several ambivalents and the opposed were particularly critical of the commercialization of MAR (I1, I2, I3, I4, I6). I1 perceived MAR as a capitalist system that makes money at the expense of people experiencing high levels of psychological stress because of childlessness. I2 described MAR as a massive international business that has expanded its scope beyond infertility treatment to include fulfilling the desire to have a child. Thus, MAR targets almost everyone and focuses solely on expansion and profit. The influence of business and vested interests, she said, can lead to overpromising. MAR has been completely commercialized, I2 noted, as technology that replaces natural processes is always big business in a capitalist system. Consequently, ethical boundaries are given less consideration. In her view, reproductive doctors in public hospitals are more critical of MAR than those in private ones. I6 pointed out that MAR in Austria is mainly organized in private clinics. Doctors may have different attitudes, she said, but in her view, MAR is an absolute "money printing press." I4, an opponent, perceived MAR as a heavily lobbied business and a product of the pharmaceutical industry and reproductive physicians. Other respondents qualified the commercialization argument. I8, an ambivalent, recognized that medicine in general is a business and MAR an expensive treatment. I9, an advocate, acknowledged the argument that permitting SEF would lead to commercialization. However, while it is widely known that medicine is a multi-billion-dollar business, this, she said, is less often discussed in other medical areas.

3.1.9. Cost/Benefit, Inequality, and Causes of Infertility

I5, an advocate, was uncertain about the cost/benefit of SEF. Stimulating ovaries and retrieving eggs is physically and emotionally demanding. Yet not all women actually use these eggs later. Therefore, the question arises whether the effort is proportionate to the outcome. I10 did not see the market for SEF because not many women between 20 and 25 years of age can invest €10,000. I3 and I7, both ambivalents, also addressed economic aspects of SEF, i.e., the costs associated with cryopreservation.

Respondents from all groups raised economic and social inequality (I1, I3, I4, I9). I9, an advocate, perceived unequal access to MAR as problematic because wealthy people can use services across borders. I3, an ambivalent, was concerned that if SEF is permitted, demands on public health insurance will rise because of equality arguments. I4, an opponent, perceived SEF not as a solution for everyone, but limited to "educated individuals in managerial positions" who can afford it. Ambivalents and the opponent observed that Austrian

regulations are circumvented by cross-border health services. Some were critical of the "obvious ways" in which legislation is avoided (I1) and that some providers would "exploit all possibilities" (I4). Others accepted it as a matter of fact (I6, I8).

The ambivalents and the opponent identified rising infertility as another driver of MAR that society needs to address. I1 and I7, two ambivalents, called for more research into the causes of increased infertility in Western countries. I4, an opponent, anticipated future problems with decreasing fertility in men and women and late motherhood.

3.2. How to Regulate SEF

Respondents had different positions on how to regulate SEF.

3.2.1. Reconciling Work and Care

Advocate I5 believed that legalizing SEF could have a positive impact on some people's lives, but she would not place too much emphasis on technical solutions to the problem of reconciling work and having children. Childcare facilities and paternity leave, she said, would be more useful than SEF. She did not perceive widespread late parenthood as positive either and would rather make it easier for people to have children before turning thirty. Another advocate, I9, believed both support for parents and SEF are necessary, as many women want to have children later because they have not yet found the right partner. She demanded equal distribution of care work, as well as the adaptation of work to people's realities, rather than the other way around.

I3, an ambivalent, believed that state and society should do everything possible to encourage people to have children at an early age. Another ambivalent, I6, said that radical financial and legal changes are needed to reconcile family and work and achieve gender equality in care work. This would prevent women from suffering a career break due to pregnancy and prevent men from panicking about taking extended parental leave for fear of professional disadvantages. Childcare facilities and the financial security of single parents need improvement. This would reduce pressure on women and allow people to decide when to have children. I7, also ambivalent, called for better opportunities to have children and to balance work and family. She advocated gender equality in childcare, more support, and, above all, appropriate out-of-home care for children of all ages. I4, an opponent, supported closing the gender pay gap, equally sharing housework, and providing widespread childcare facilities. Additionally, she called for new male role models who view fatherhood and caregiving positively. In summary, she said she would like to see a society that appreciates having children and creates social and economic conditions that enable people to be "good enough parents."

3.2.2. Awareness, Counseling, and Public Debate

I2, an ambivalent, called for independent information and psychological support for couples in MAR treatment from the start. It should address risks, chances, ethical considerations, and children's rights and include medical and psychodynamic dimensions of MAR (I7). Current law, I7 explained, only requires physicians to mention psychological counseling as an option. Therefore, couples often seek it only after several unsuccessful cycles. The aspect of the child, she said, as well as counseling, is often omitted in the

MAR debate. I7 believed that, if SEF is allowed, parents and others involved should be well informed about its implications, especially the psychological consequences and the welfare of the child. I8, an ambivalent, considered counseling in SEF challenging because of the serious future implications. It requires talking to the person, understanding their individual situation, reasons, and motivations. I8 noted that a physician who perceives SEF as part of reproductive rights may advise differently than one who considers specifics such as a woman's age, health, chances of finding a partner and getting pregnant in the next few years, the possible psychological effects of SEF, and the woman's desire to avoid the small risks of egg retrieval. I10, an advocate, also highlighted the important influence of counselors. On the other hand, he said that patients today have access to a wealth of information from the Internet. They have ideas about the treatment they want, which might not always be possible. I10 advocated providing realistic information that includes alternatives. He emphasized mandatory and documented information, an obligatory waiting period of 14 days, and recognized the necessity of psychological counseling in certain cases. Yet, he opposed mandatory psychological counseling, which he perceived as coercive. In contrast, I4, an opponent, insisted on mandatory psychological counseling and the opportunity to discuss the psychological implications of MAR. Psychological counseling should be offered to discuss patients' desires and ideas and to enable them to reflect before treatment starts. She explained that professional, neutral, and non-directive psychological counseling, in which the counselor acts as a "sparring partner" provides a space to reflect on the situation and decision. It would be important, she said, to give the psyche more space in MAR treatment because it is during this process that the foundation of the relation to the child is formed. An "inner dialogue" is important for this.

Interviewees differed on whether SEF should be covered by public health insurance. I5, an advocate, thought that SEF would be too expensive for many. Coverage by public health insurance would be justified because of the low birth rate. I9, another advocate, believed that women in the first phase should have to pay for the service. Later, public health insurance could cover some of the costs. I2, an ambivalent, opposed public funding of SEF, and I6, another ambivalent, thought public funds should cover expenses for those who need financial support.

3.2.3. Public Debate

Respondents had different perspectives on the Austrian public debate of MAR. I10, a MAR provider, had a positive view of the discourse and believed the public still finds MAR exciting. He advocated dialogue and exchange, noting a positive culture in this regard. He was satisfied with the openness of the discourse and the treatments that are legally available. He highlighted that public information on SEF is necessary.

Ambivalents and opponents were more critical. I1 thought that, as with other technologies, more public debate on medical and ethical issues are needed to avoid overlooking potential negative impacts. Another ambivalent, I2, said public debate tends to be overly black-and-white. She noted that, in the past, media coverage was often imbalanced, focusing primarily on the suffering of childless couples and the perspective of reproductive physicians. I3 believed that NGOs critical of MAR would be perceived as "spoilsports" because they contradict the positive portrayals of MAR on service providers' websites. I6 criticized romanticized ideas about MAR in traditional and social media that promise "long-term fertility" and downplay the risks and discomforts of MAR. I4 argued that public debate never addresses fundamental issues of women's and children's psychosocial and physical well-being. I2 and I7 perceived public debate as distorted because it focuses on reproductive autonomy and the right to start a family instead of the rights

and needs of children. I7 stated that children's needs are often trivialized, especially by some MAR professionals. She called for public discussion and systematic studies on the long-term effects of ovarian stimulation. If SEF were to be permitted, I2 believed awareness should be raised among women of childbearing age, specifically those between 20 and 25 years old. I6 noted that SEF requires public discourse to avoid pressuring women to undergo SEF. She called for a proper public discussion about reproduction, the desire to have children, abortion, and prenatal diagnosis. I4, an opponent, believed that MAR is a serious issue that deserves more sociopolitical, sociological, and psychological consideration. If SEF was permitted, it would be just another issue of research being conducted without prior consideration of possible negative consequences, which would then need to be addressed later.

3.2.4. Policymaking

Interviewees criticized how MAR policy is made in Austria, noting policymakers' unwillingness or inability to reform. I9, an advocate, pointed out that legislation is quite outdated and, she believed, has never been revised. She attributed this to the conservative party's decades-long dominance of politics. She also noted that, in politics, reproductive medicine is perceived as a "women's issue." Despite affecting so many people, it is not a priority for the Social Democratic Party of Austria (SPÖ) either. Although the motion to lift the ban on SEF was well received within the party's youth organization, the issue remains controversial and marginal within the party as a whole. Advocate I10 mentioned that the FMedG was designed in the early 1990s to prevent practices that opponents had considered to be "evil." The law was created when many procedures common today had not yet been invented, and, since then, it has only been amended in a piecemeal manner. Although he viewed the 2015 reform as liberalizing many things, he believed that the Austrian legislative process lacks a comprehensive approach that brings all stakeholders together. He perceived no public discussion in 2015 about how to comprehensively reform the law. The legislature was forced to reform due to decisions made by European and Austrian courts. However, leading politicians were only willing to change the law to the bare minimum. I10 perceived the Ministry as reactive and driven solely by political mandate, which he believes is lacking.

I2, an ambivalent, noted that SPÖ labeled critics of MAR as being associated with the Church, refusing to engage with them. Criticism of MAR was perceived as coming solely from the Catholic Church and the political right. She said that she fails to understand this position because leftist and anti-capitalist views, which were ignored and neglected in the Austrian MAR discourse, have also criticized MAR in the past. However, she believed this has changed in recent years, as SPÖ and Greens have slightly altered their views. She noted that several politicians have studied the issue since then, and that there are now more critical left-wing views on MAR in politics.

Several interviewees from all groups criticized the level of information about MAR among politicians. I6 felt that many policymakers lack basic knowledge of MAR and, to a certain extent, rely on their gut feeling. In her view, political discourse lacks individuals with expertise on the complex issue. I8 believed that politicians are unable to define basic MAR concepts and lack in-depth knowledge to understand the risks. I2 expressed the impression that a few years ago, even leading politicians knew very little about MAR. I10 recognized expertise with civil servants but not with politicians. I4 criticized the Austrian Bioethics Commission for never being very feminist and lacking a well-founded consideration of the psychological aspects of MAR. Decision-makers also fail to consider, she said, the psychological consequences of MAR.

I8 thought that since medicine is a business, committees will consider different aspects if they include people who benefit financially from MAR. I10, an advocate and provider of MAR, stated that physicians were involved in the initial FMedG negotiations in the 1990s but not in the drafting of legal texts. Infertility patients have little impact on policymaking, he said. They do not have a strong patient group, as MAR patients are a transient group. I6, an ambivalent, mentioned that MAR negotiations take place behind closed doors and are mainly determined by what is medically possible and what the social security system can afford. There is little general discussion about "what we actually want as society." I7, another ambivalent, criticized that none of the demands of the Austrian Children's League, which concerned children's and adolescents' health, were accepted during the FMedG reform in 2015. I4, an opponent, criticized that the demands of the Association of Psychotherapists were not considered.

4. Discussion

Analysis revealed advocates, ambivalents, and opponents of legalization. They raised issues that align with the extant literature and include the assessment of MAR, risk and success rates, autonomy, feasibility, the desire for a child, timing, biography, career, partnerships, potential pressure, costs, commercialization, unequal access, causes of infertility, public debate, and policymaking.

The opponent and ambivalents rejected MAR entirely or partially for various reasons, including potential abuse, commercialization of reproduction, and a lack of consideration for potential negative societal impact. They criticized medical and psychological risks, the idea of a right to have a child, and the prioritization of the desire for one's own child. Some criticized surrogacy and egg donation, the risk of creating "designer babies" and neglecting children's rights. Some ambivalents perceived SEF as acceptable, as it would be performed on the women themselves. Advocates viewed MAR as scientific and technological progress. Respondents from all groups mentioned medical risks and the actual chances of success.

Autonomy was a key theme. Interviewees' understanding differed: Autonomy meant being able to become a parent later, regardless of a present partner's wish for a child, and to gain independence from age-related decrease in fertility. It was also the freedom to decide whether or not to have children and independence from societal expectations. Autonomy also meant the right to make self-determined decisions about abortion. Ambivalents and the opponent perceived autonomy from nature rather critically and emphasized limits of autonomy more strongly when the rights of third parties, particularly children, are concerned.

Literature on SEF also debates reproductive autonomy. De Proost et al. (2025, p. 1) define it as "the power to decide if, when, and how to have children," which is constrained by scarce resources and "pressures (by family members, medical professionals, and others) and other personal and societal constraints" (p. 1). Pape and Tschudin (2023) suggest that SEF could be a step toward gender equality, yet it could also entrench existing role patterns. Wunder (2013) qualifies reproductive autonomy by considering the well-being of the child. It would be in the child's best interests to have "young and vigorous (or healthy) parents" (Wunder, 2013, p. 3; see also Schochow et al., 2018).

De Proost et al. (2025) are skeptical that permitting SEF alone increases reproductive autonomy. Considering the low cost–benefit ratio of SEF and the existing success rates, the increase in autonomy depends not only on the procedure's availability but also on patient characteristics and the context in which

the decision to undergo SEF is made (De Proost et al., 2025, p. 3). Interviewees' diverging views on whether SEF means more autonomy or additional pressure mirror a controversy among feminists about whether EF contributes to women's liberation, as summarized by De Proost and Coene (2019). Liberal feminists, in alliance with bioethicists and clinicians, argue that SEF increases gender equality by providing women with more choices. Others argue that SEF supports women's compliance with "male-oriented labor market and pronatalist ideologies" (De Proost & Coene, 2019, p. 358). De Proost and Coene criticize the traditional concept of autonomy that highlights the "liberating potential" of SEF, ignoring that reproductive choices happen within a social environment. They propose the broader concept of "reproductive justice" developed by the "Asian Communities for Reproductive Justice" which defines reproductive justice as "the complete physical, mental, spiritual, political, economic, and social well-being of women and girls, which will be achieved only when women and girls have the economic, social, and political power and resources to make healthy decisions about our bodies, sexuality, and reproduction for ourselves, our families, and our communities in all areas of our lives" (ACRJ, 2005, as cited in De Proost & Coene, 2019, p. 364).

The idea of independence from nature mentioned in interviews is linked to technical feasibility. One ambivalent connected the critique of feasibility to a broader critique of coercive aspects of individualization. Several ambivalents and the opponent saw feasibility connected with strongly believing in technology. They warned against hubris and the desire to "make children" and "control everything." While sympathizing with those seeking to have children via MAR, they emphasized the limits of feasibility and advocated alternatives, including adoption and fostering. They encouraged reflection on the desire to have a child and acceptance of biological limitations, as well as finding meaning in life apart from having a biological child. Advocates portray SEF as techno-social development that could reduce pressure on women and contribute to gender equality and autonomy. Literature also discusses technical feasibility. Wunder (2013, p. 3) perceives SEF as part of a societal trend of rejecting the "finiteness and unavailability of human life."

Several interviewees expressed concern that employers could pressure women into SEF if offered as an employee benefit. The extant literature also points in this direction: Dowling (2021) reports that, in 2015, 5% of large US companies with over 500 employees offered SEF as an employee benefit. By 2022, this figure had increased to 40% (Davidovic, 2022). Espinosa-Herrera and Pietrini-Sánchez (2025, p. 126) argue that offering SEF as an employee benefit would "maintain current workplace inequalities and impose an option for women with multiple risks and externalities, while distracting them from addressing pernicious gender-based (unconscious) bias and attitudes in the workplace" (see also Pape & Tschudin, 2023). A survey in Germany states that 63% of female respondents and 52% of male respondents did not think it was appropriate for women to use SEF, if offered by their employer (Institut der deutschen Wirtschaft Köln, 2014).

Advocates, ambivalents, and opponents viewed the desire and right to have a child differently. Several ambivalents criticized placing an absolute value on the desire to have a child, arguing that children should not be used for self-fulfillment and to fulfill one's purpose in life. Many ambivalents opposed the concept of a "right to a child."

Another key theme was the right moment to have a child. Advocates viewed this as an individual decision based on one's life circumstances. Conversely, several ambivalents and the opponent emphasized that pregnancy is always associated with ambivalence because new roles and identities must be established.

Wunder (2013) notes that "pregnancy, delivery, and raising children never really fit into a woman's career plan, regardless of age. There is no 'ideal time' " (Wunder, 2013, p 4; see also Pape & Tschudin, 2023).

Ambivalents argued that SEF would increase social inequalities because it is expensive and only affordable for a small part of the population. In 2019, the cost per cycle was, e.g., $3,200 in Israel, $10,000 in the United States, and up to $7,500 in Australia in 2015 (Johnston et al., 2022). The prohibitive SEF costs would pose the greatest barrier. The high cost of SEF may exacerbate social inequalities in healthcare (Egarter, 2025; Katsani et al., 2024). In line with this, De Proost and Coene (2019, p. 359) characterize the ideal-typical user of SEF as "mostly from Europe, the United Kingdom, and America" and "predominantly white, heterosexual, and middle class." Myers and Martin (2021, p. 2) point out discrimination in SEF of "some raced and classed populations." As discussed in the literature, respondents also had different views on cost coverage by public health insurance, financial support for those in need, and self-payment. In a non-representative survey of Australian women, Johnston et al. (2022) found that, consistent with previous research in other countries, there was more support for MEF than for SEF. 87% of participants supported full or partial public funding of MEF, while 42% supported full or partial public funding of SEF. Egarter (2025) argues that the unfavorable cost–benefit ratio speaks against financing SEF through the public health insurance. Given the high costs and the current financial pressure on the Austrian public social insurance system, which may limit its ability to cover SEF, there is a risk that, if permitted, SEF may only be available to socio-economically privileged groups who are well informed about this option, rather than to marginalized groups.

Several interviewees criticized that only a small proportion of eggs are used. Egarter (2025) indicates a collection rate of frozen eggs ranging from 6% to 12% (see also Alteri et al., 2019). Thus, the cost–benefit ratio of SEF is poor, estimated at approximately $600,000 to $1,000,000 per additional live birth in 2018 (Egarter, 2025; Wunder, 2013). Reasons for not using frozen eggs include pregnancy without MAR, feeling too old to be a parent, not having a partner, and not feeling ready for a child (De Proost et al., 2025). Johnston et al. (2022) criticize the use of cost-effectiveness because it does not consider the complexity of SEF.

Interviewees used time metaphors such as "clock," "biological clock," and "ticking clock," which carry the notion of inevitability and pressure. SEF would help to "expand the time frame" and to gain "time." This indicates that SEF is connected with changing ideas of "temporality" and how to deal with time in reproduction (Rimon-Zarfaty & Schicktanz, 2022). Metaphors like "insurance" or "bank" are linked to economy, pointing at a "neoliberal ethos" that makes women "responsible for risk-managing their own reproductive futures by forms of self-investment" and is connected to liberal values such as "responsibility, self-actualization, and self-determined action" (De Proost & Coene, 2019, p. 360; see also Myers & Martin, 2021; Rimon-Zarfaty & Schicktanz, 2022).

Those who were ambivalent or opposed MAR perceived it as useful at times, but they also criticized its commercialization and focus on expansion. However, an advocate mitigated this criticism by pointing out that MAR, like any other form of modern medicine, is commercialized. The academic literature discusses commercialization of reproduction: EF is one of the fastest-growing MAR techniques worldwide (De Proost et al., 2025). In the US, 15% of fertility clinics are in academic research centers; the rest are "private, for-profit companies" (Espinosa-Herrera & Pietrini-Sánchez, 2025, p. 124). Wunder (2013) criticizes commercial practices of advertising SEF. On the other hand, Egarter (2025) recognizes the economic

interests of IVF centers, which usually are in favor of the general approval of SEF. Myers and Martin (2021, p. 2) portray the "expansive process" of "medicalization" of SEF that underlies the commercialization of MAR and turns SEF into a "prophylactic technology" (Myers & Martin, 2021, p. 3). In medicalization, natural life processes and social problems are recast as medical conditions to be treated by medical practitioners (Myers & Martin, 2021, p. 2).

One reason for SEF mentioned in interviews was that today's women are more focused on their careers. Having a child means taking time out from work. Other reasons included a lack of suitable partners. Changing attitudes toward partnerships and family life have also been cited as drivers of SEF; for example, partnership stability and the desire to start a family are less important today. Baldwin et al. (2019, p. 171) found little empirical evidence that women were postponing motherhood to advance their careers. Instead, their motives were "age, relationship status, concerns about current intimate relationships, and fears of future regret." Respondents felt that postponement was not a deliberate decision; rather, they "had not yet been in a position where motherhood was an option" due to lack of the right partner, someone "they felt could commit to the parenting project" (Baldwin et al., 2019, p. 171).

Ambivalents and the opponent criticized the prevailing practice of MAR of paying little attention to the psychological impact on women, partners, third parties, and children. Some treatments would particularly neglect and/or violate the rights of third parties and children. The literature suggests potential psychological burden due to freezing and later use of eggs (Egarter, 2025). There is a lack of research on the long-term effects of SEF on children and families. Examples include the earlier onset of the burden on children caring for their elderly parents due to SEF and the increased likelihood of orphanhood due to delayed motherhood (Espinosa-Herrera & Pietrini-Sánchez, 2025).

All groups assessed SEF not as "the" solution to balancing parenthood and work. The ambivalents and the opponent argued that SEF fails to address the underlying problem of reconciling women's lives with parenthood. Interviewees from all groups agreed that it would be best to provide widespread, child-friendly childcare facilities that enable a better balance of work and care. SEF might even have a reverse effect of reducing government efforts to provide widespread childcare. Additionally, respondents demanded equal sharing of domestic care responsibilities, closing the gender pay gap, and promoting male caregiving role models. These changes would make it easier to have children at the peak of fertility. However, while ambivalents viewed this as an alternative to SEF, advocates perceived them as additional measures, that are more important than legalizing SEF. The ambivalents and the opponent also advocated alternatives such as facilitating adoption and fostering, addressing the causes of declining male and female infertility, and accepting infertility and finding other meaning in life. In line with these findings, De Proost et al. (2025, p. 3) note that SEF does not address gender inequality but would only be a "palliative solution" failing to deal with the underlying causes of "delayed childbearing." SEF could be a quick fix that inhibits structural changes toward solidarity and equality (Espinosa-Herrera & Pietrini-Sánchez, 2025). Egarter (2025) discusses how SEF could negatively impact the state's efforts to provide widespread childcare facilities if it becomes more common.

Interviewees called for comprehensive counseling before SEF, including information about the technical procedure and medical risks. It should provide space for women to reflect on their situation and the psychological aspects of MAR. According to literature, informed consent should include the medical risks of

SEF, the fact that SEF does not guarantee pregnancy after the stored eggs are used, and the medical risks of pregnancy at advanced age (Egarter, 2025). Wunder (2013, p. 5) considers it crucial to provide "information about the risk of failure, judicial, ethical, and psychological issues, and, last but not least, the high costs." Katsani et al. (2024) conclude that counseling requires an interdisciplinary team of specialists, including a gynaecologist/obstetrician, an embryologist, and a psychologist.

Many interviewees described the Austrian political system as immobile to reform. Often, individual citizens force regulatory change by taking court action and claiming that existing legislation violates human rights. Politicians were described as reactive, conceding only the minimum required by the courts. MAR was described as controversial and a marginal women's issue within the SPÖ. Interviewees noted strong power asymmetries between actors. Negotiations were described as taking place behind closed doors, providing privileged access for jurists. Often, stakeholders, such as patient organizations, psychotherapists, and child rights advocates, were perceived as excluded from decision-making and remaining unheard. In contrast to some ambivalents, an advocate perceived only limited influence on lawmaking by reproductive physicians. In general, respondents did not perceive a willingness of Austrian policy makers to engage in a broad public debate and comprehensive reform. Politicians were described as uninformed, and the political debate as polarized with little constructive dialogue and willingness to engage in discussion with those who hold different viewpoints.

5. Strengths and Limitations

The design of this study has limitations. Rather than portraying the attitudes of the general population or the political debate, it depicts in detail the discourse of individuals who actively participate in public debate on MAR. These individuals are more knowledgeable about MAR, have a higher level of formal education, and are more politically active than the average population. All are from Vienna's urban area, and none are part of a minority group. With nine females and one man, the sample is also heavily biased towards women. Yet, this reflects the gender composition of most events at which participants were recruited. Public and political debate, as well as the media and marginalized groups, are often less well-informed about MAR and SEF than the respondents and tend to focus only on limited aspects of MAR. A qualitative research design was chosen since quantitative surveys, which are often used to investigate the general public's attitudes towards MAR (e.g., Marketagent, 2021), are of limited value since many respondents are unfamiliar with MAR and its complexities. Furthermore, surveys often limit respondents to closed questions, failing to provide a nuanced picture of their attitudes and motives. Therefore, to obtain meaningful results regarding the attitudes of the general public and/or marginalized groups towards MAR and SEF, future research should first thoroughly inform participants about SEF and MAR, as well as their medical, individual, and societal implications, before exploring their attitudes and discourse. The nuanced findings from this research could enrich and support public debate.

6. Conclusion

The themes identified in this study are similar to those in international literature. SEF is controversial, and attitudes and opinions about it, as well as about MAR, vary. Arguments focus not only on the moral permissibility of SEF, but also encompass broader social issues concerning life planning, partnership, work, family, and commercialization of medicine in a capitalist society. Interviews reveal a multifaceted web of arguments that is rarely addressed in its complexity in public debates or politics. Instead, the latter often

focuses on reproductive autonomy. Austrian policymakers are described as reluctant or unable to discuss and regulate the rapidly advancing area of MAR with its tremendous individual and societal impact (Griessler, 2010; Griessler & Winkler, 2022). Opinion polls, which are often used to support particular positions, interests, and policies (e.g., APA, 2021; Marketagent, 2021), can be misleading if they ask overly simplified questions that fail to address the medical, social, ethical, and psychological complexity of SEF. In order to address them, it is necessary to create forums for political discussion that open up public discursive spaces. Formats of deliberative democracy, such as citizen assemblies, in which randomly selected citizens systematically investigate and discuss a topic, could facilitate discussions that do justice to the complexity of the issues at stake (OECD, 2020).

Acknowledgments

I would like to thank all the interviewees for their willingness to dedicate their time to sharing their views and experiences on the topic. Without them, this study would not have been possible. I would also like to thank my home institution, the Institute for Advanced Study, for supporting this research.

Funding

Publication of this article in open access was made possible through the institutional membership agreement between the Institute for Advanced Studies and Cogitatio Press.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

Interview data on which this article is based is not available because of data protection.

LLMs Disclosure

The interviews were transcribed using F4 AI Transcription, then checked for accuracy and edited by the author. Key passages of the interviews were translated into English with the help of AI (deepl.com) and then checked for accuracy and edited by the author.

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Social Inclusion
2025 • Volume 13 • Article 10628
https://doi.org/10.17645/si.10628

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Socio-Demographic Characteristics and Stress Perceptions Among IVF Patients: The SOFIA-1 Study in Northern Germany

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Submitted: 28 April 2025 **Accepted:** 6 August 2025 **Published:** 22 October 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Emotional and psychological distress is common among patients undergoing in vitro fertilization (IVF). However, few studies have examined stress perception at standardized stages of treatment or tested methods for integrating socio-demographic data collection into clinical workflows. The two main objectives of this pilot study (SOFIA-1) are to assess the feasibility of collecting sensitive data from IVF patients and to investigate the factors contributing to stress during IVF treatment. To accomplish these objectives, an anonymous, digitally administered survey was embedded in the clinical routine at two fertility clinics in northern Germany (Lübeck and Kiel). Women undergoing their first IVF cycle were invited to voluntarily participate in accordance with ethical standards. The survey included socio-demographic and treatment-related variables, such as items on stress perception. High completion rates and acceptable response rates at both clinics demonstrate the feasibility of collecting such data during treatment. Many participants in our sample (n = 101) experienced significant psychological distress at the start of treatment, particularly those with longer infertility histories or previous experiences at other clinics. Stress levels were influenced by individual, partner, and relationship factors, underscoring the importance of using more detailed assessment tools, such as fertility-specific stress scales. The SOFIA-1 study provides a methodological basis for larger, multicenter studies that explore the psychosocial aspects of fertility care. Expanding data collection could highlight differences in psychological support across clinics and reveal unmet needs. Including alternative reproductive goals and addressing social pressures can promote a more inclusive, patient-centered approach to IVF treatment.

Keywords
infertility; in vitro fertilization; perceived stress; reproductive justice; social inequality; treatment-related characteristics

1. Introduction

In recent decades, assisted reproductive technologies (ART), particularly in vitro fertilization (IVF), have emerged as essential avenues for individuals and couples facing fertility problems or social barriers to realizing their desire for parenthood. As IVF has become more accessible due to biomedical advancements, its social implications have grown more complex. Despite the abundance of clinical data on ART usage and outcomes, particularly in countries such as Germany, where fertility registries meticulously document treatment cycles, success rates, and clinical protocols (e.g., Bartnitzky et al., 2024), there is still a significant knowledge gap regarding who seeks these treatments and what their motivations are. The demographic and socioeconomic profiles of individuals and couples undergoing ART are often absent from registry data, particularly in Germany, where the focus is on biomedical outcomes rather than on structural conditions and individual experiences. This omission limits our understanding of how access to and experiences with ART are shaped by various social determinants such as income, education, age, relationship status, and cultural norms about family formation, as described in the framework of Braveman and Gottlieb (2014) and discussed by Köppen et al. (2021).

This gap holds particular significance in Germany, a country that has a robust public health system yet provides only partial reimbursement for ART. Although ART is becoming more normalized within broader reproductive health practices, patients themselves bear the disproportionate financial burden and emotional toll of treatments such as IVF. Consequently, the pathways to ART are neither universally accessible nor equally navigable. Economic precarity, institutional gatekeeping, and normative assumptions about gender, sexuality, and parenthood can all operate to stratify reproductive opportunities. Despite the obvious relationship between socioeconomic status and access to ART, however, systematic empirical studies exploring this association in Germany remain scarce. This limitation hinders scholarly understanding and the development of equitable reproductive health policies and inclusive clinical practices.

To address this gap, the current study provides new empirical insights into the socio-demographic profiles of individuals undergoing IVF using data collected from a prospective, two-clinic, anonymous online questionnaire study conducted in Schleswig-Holstein, a federal state in northern Germany. Titled Socio-Economic Factors in the Context of IVF Treatments (SOFIA-1), the study is a pilot effort to gather sensitive yet essential information, such as data on household income, employment status, and perceived stress. The study was conducted at two fertility clinics and targeted partnered women in opposite-sex relationships who were undergoing their first IVF cycle. Participants completed voluntarily an anonymized online survey on the day of oocyte retrieval. The aim of focusing on this specific treatment milestone was to minimize recall bias while capturing participants' socioeconomic realities and well-being at a critical point in the IVF process.

Our study contributes to the growing body of work on reproductive justice, a framework that emphasizes the right to reproduce under conditions of dignity, support, and equity (Ross & Solinger, 2017). Originally

developed in the US to address disparities in reproductive access based on race and class, the principles of reproductive justice are becoming increasingly relevant in Europe. Here, neoliberal health care reforms, changing demographic trends, and evolving family norms are challenging longstanding beliefs about parenthood and the conditions under which it can occur.

The study has two central aims. First, it evaluates the feasibility of gathering socio-demographic, psychological, and treatment-related data from IVF patients in a clinical setting using anonymized digital tools. This consideration is crucial, as previous research (e.g., Robertson et al., 2022) has highlighted the ethical sensitivities and practical difficulties of collecting data on income, fertility (intentions), and mental health in reproductive health contexts. Thus, demonstrating the viability of this data collection method is a necessary prerequisite for expanding similar initiatives and for systematically integrating socioeconomic information into reproductive health research in Germany and beyond. Second, the study offers descriptive insights from 101 partnered women, highlighting the diverse experiences and backgrounds of individuals and couples undergoing IVF. Although the goal is not to draw generalizable conclusions, the findings reveal significant patterns worthy of further investigation. Many participants, for example, reported experiencing psychological distress, an issue that transcends economic boundaries but that may be exacerbated by unstable socioeconomic conditions. To better understand psychological distress in the context of IVF treatment, we will turn to social-psychological theories of attribution and identity.

2. Putting our Study in Context: The Development of Family Formation in Germany

In recent decades, Germany has experienced a significant delay in family formation and expansion (Figure 1). While the largest share of births in 1990 were to women aged 25–29, by 2004, women aged 30–34 had the largest share of births—a trend that has continued to increase. In 2024, 36% of all live births were to women in the 30-34 age group, and 6% of births were to women aged 40 and older, up from 1.5% in 1990 (Kuhnt & Trappe, 2024). This trend is particularly pronounced for first births. In 2024, about 58% of first-time mothers were aged 30 or older (Destatis, 2025a). Germany ranks among the European countries with the highest average maternal age at first birth, surpassed only by a few Western and Southern European nations, such as Cyprus, Ireland, Switzerland, and Spain (Eurostat, 2025). In 2024, the average age at first birth for women in Germany was 30.4 years, ranging from 28.5 years in the federal state of Saxony-Anhalt to 31.5 years in Hamburg, while the mean age at first birth for women in Schleswig-Holstein was 30.1 years, close to the national average (Destatis, 2025b). The average age at first birth in Germany has increased by 1.6 years since 2009 for women, and by 0.5 years since 2014 for men (Destatis, 2025c, 2025d).

The socio-demographic disparities are striking. Women holding university degrees typically have their first child almost three years later than women without academic degrees, and they are also more likely to remain childless (Bujard & Diabaté, 2016). Furthermore, disparities exist based on nationality, marital status, and geographic region. For instance, women in western Germany tend to be older than women in eastern Germany at the time of their first childbirth. Delaying childbearing reduces the reproductive window and increases the risk of involuntary childlessness (Beaujouan & Sobotka, 2022). This trend also reflects broader societal changes, including improved access to contraception, shifting norms of parenthood, longer periods of education, and economic unpredictability (Trappe & Köppen, 2021). Consequently, fertility postponement is a demographic phenomenon that reflects the changing position of childbearing in individual life courses in contemporary Germany.

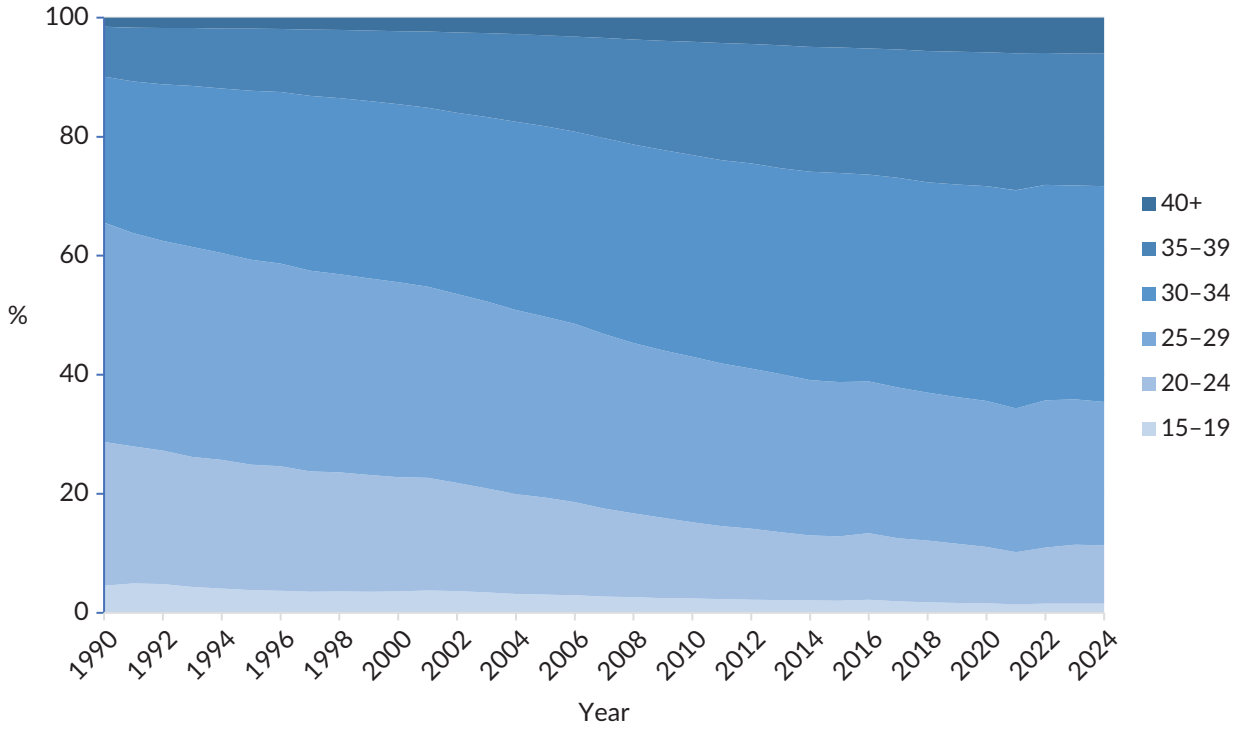

Figure 1. The proportion of live births per 1,000 women in the corresponding age group between 1990–2024. Source: Destatis (2025e).

The trend among women and men to postpone their first childbirth is mirrored in the rising ages of individuals seeking reproductive health care. Since 1997, the average age of individuals undergoing IVF treatment has increased by 3.2 years for women and by 3.3 years for men (Bartnitzky et al., 2024, p. 244). However, the German IVF Registry does not provide additional information on the socio-demographic characteristics of users of reproductive medicine beyond age. Furthermore, due to data anonymization, it does not offer disaggregated information at the federal state level. This underscores the need for an in-depth study of IVF user groups in Germany.

Socio-demographic disparities are crucial to this study because they influence how individuals perceive stress and access support during IVF. Factors such as income, education, employment, and migration background can increase the levels of psychological stress individuals experience due to financial difficulties, limited access to information, and reduced social support (Gupta et al., 2024). These factors also influence coping strategies and the availability of resources for dealing with infertility. Therefore, including socio-demographic data is essential to understanding psychological distress, identifying vulnerable groups, and developing targeted, needs-based support in reproductive health care.

3. Data and Methods

3.1. Participants and Setting of SOFIA-1

The SOFIA-1 study was conducted at two university-based clinical centers in Lübeck and Kiel in the northern German state of Schleswig-Holstein. Data for this pilot study were collected from November 2023

to December 2024 using an online questionnaire based on the SoSci Survey software (Leiner, 2024). The target group consisted of partnered women in opposite-sex relationships who were beginning IVF treatment at the fertility clinics in Lübeck and Kiel, though some of these patients may have previously undergone IVF treatment at another clinic. A total of 101 surveys were conducted (76 in Lübeck, 22 in Kiel, and three unknown), of which 88 were completed.

Schleswig-Holstein, located in Germany's northernmost region, offers a distinct setting for conducting an in-depth study of IFV users, especially in contrast to the country's more urban areas. Most of the population of this predominantly rural state lives in smaller towns and villages, with Kiel and Lübeck being the only two cities with over 100,000 residents. This geographic profile sets Schleswig-Holstein apart from metropolitan areas, where health care services, including fertility treatment, tend to be more prevalent. In addition, the state's proximity to Denmark introduces further complexity as residents may seek ART services that follow different regulations across the border. Denmark is known for its comparatively permissive legal framework for reproductive health care (Herrmann, 2022), with more comprehensive regulations on donor anonymity and age limits. Thus, Denmark provides treatment options that are not available in Germany. In Germany, access to IVF is regulated by a combination of legislation, medical guidelines, and health insurance policies. Treatment is typically offered to heterosexual married couples, while unmarried couples face more barriers, and access for single women and female same-sex couples is more restricted, although evolving. Public health insurance covers up to 50% of the cost of three IVF cycles for married couples in which the woman is between 25 and 40 years old and the man is up to 50 years old, and only their own gametes may be used. Before treatment begins, couples must undergo mandatory counseling on the medical and psycho-social aspects of assisted reproduction with a physician who will not be providing the treatment (Köppen et al., 2021).

In terms of reproductive health care, Schleswig-Holstein has five fertility centers that are scattered across the region—a number that reflects both the state's relatively low population density and its specialized health care infrastructure. While these centers provide essential ART services, including IVF, their geographic distribution and capacity can mean that access to these services may be more limited for those living in remote areas. Traveling to a fertility center often involves significant logistical and financial considerations for individuals and couples, which can pose additional barriers to accessing reproductive treatments. Another aspect of reproductive medicine in Schleswig-Holstein is the state's limited financial support for ART. Currently, 12 of the 16 federal states provide more generous coverage of fertility treatments for their residents by reducing co-payments (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2025). Since Schleswig-Holstein is not one of these states, individuals and couples with fewer economic resources may face serious barriers to accessing these services.

3.2. Data Collection

To recruit participants for the study, we approached women on the day of their first IVF treatment cycle during oocyte retrieval, when they were already at the clinic and had a waiting time between different steps of the procedure. Oocyte retrieval is a central step in the IVF process, taking place after ovarian stimulation and monitoring and before fertilization and embryo transfer. By this stage, most patients have completed diagnostic assessments and started active treatment. Between 90 and 95% of individuals starting ovarian stimulation will undergo a trial at oocyte retrieval. Indications for IVF include tubal factor infertility, male infertility (e.g., low sperm count), diminished ovarian reserve, unexplained infertility, and advanced maternal

age. The oocyte retrieval appointment provides a consistent and neutral reference point in the IVF process, enabling uniform survey administration among participants (representing a common group of IVF patients). At the centers in Lübeck and Kiel, patients do not receive analgesics (pain relief) or sedatives before oocyte retrieval. Practices may vary in other countries where analgesics or sedatives are commonly administered beforehand, which could impact patients' ability or willingness to complete surveys and may affect the accuracy of the data (e.g., Roest et al., 2019).

Ethical approval for this study was obtained from the University of Lübeck's Ethics Committee. Because complete anonymity and non-traceability of responses were essential to ensure unbiased data collection, obtaining formal written informed consent was not required. Eligible candidates had to demonstrate sufficient proficiency in the German language and have at least one partner living in Germany. A physician reviewed the medical records to confirm their eligibility based on their treatment status, language skills, and residence. These women then received a laminated, disinfectable information sheet with a QR code directing them to the online questionnaire. Patients were supposed to fill out the questionnaire in the waiting room between treatment steps. However, it is possible that some only accessed and completed the link at home by scanning the QR code. At the time of distribution, patients were typically in a waiting area with their partner, and were either awaiting the oocyte retrieval procedure (with an expected wait time of 30 to 90 minutes) or had already undergone the procedure and were in the mandatory postoperative observation period. Those who chose to participate could scan the QR code with their smartphones to access the survey platform. If necessary, a tablet or WLAN access was offered. Upon entering the questionnaire, participants were given more information about the data collection process. The questionnaire consisted of single- and multiple-choice questions, scales, and optional free-text fields for additional responses. Women were asked to answer for themselves and to provide proxy information on behalf of their current partner on topics such as education and employment, health, partnership, and family. Once completed, participants could submit the form directly through the platform. The medical team neither encouraged patients to complete the questionnaire nor inquired about their participation during the waiting period or prior to discharge, thus minimizing any perceived pressure to participate and preserving the voluntary nature of the study.

3.3. Feasibility of SOFIA-1

A primary objective of this study is to assess the feasibility of a multicenter investigation focusing on the socio-demographics and stress perceptions of partnered women undergoing IVF in Germany. We defined feasibility as the proportion of completed questionnaires out of all first oocyte retrievals at the two clinics, based on a protocol that was predefined and approved by the University of Lübeck's Ethics Committee. This measure captures response rates in a clinically relevant group and only includes fully completed surveys. Although other metrics exist, we selected this straightforward, reproducible approach to evaluate the potential for implementation in routine clinical survey studies.

Over a 13-month period, we successfully recruited 101 participants from the two clinics. Initially, we planned to stop collecting data either after surveying 100 respondents or after one year of distributing the questionnaire to potential participants. For a future multicenter study, it seems appropriate to limit the data collection period to six months or less. Reducing the time window minimizes confounding factors related to seasonal or external influences, thereby improving data comparability. It also ensures that patients are surveyed during a more consistent period, which reduces the impact of changing treatment conditions or

personal developments. A shorter study duration allows for better control over data collection, facilitating targeted management of response rates and more effective follow-ups. This, in turn, enhances data quality. Using a shorter collection timeframe in an IVF study can methodologically improve data accuracy, reduce bias, and enhance internal validity, all of which are vital for sensitive medical research (Edwards, 2010).

In terms of resources, the time and cost of preparing the survey and conducting the study were in line with our expectations. We had to purchase tablets, set up the online questionnaire, and provide on-site training for clinic staff, which had to be repeated frequently due to (unexpected) staff turnover. In addition, non-medical staff needed to be regularly updated on the study's progress to ensure that the questionnaire and related documents reached the appropriate target audience.

Regarding data collection, we observed different response rates at the two sites. From January to March 2024, the response rate was 38% (24/64 patients) in Lübeck and was 20% (13/65 patients) in Kiel. While we cannot fully explain this difference, variations in recruitment procedures, environment, or distribution of survey materials to patients may be relevant, as suggested in the literature (Dillman et al., 2014; Singer et al., 2000). Considering the sensitivity of the topic at hand and the average response rate of about 44% for online surveys in published research (Wu et al., 2022), these rates seem adequate. Willingness to participate may also depend on the timing of the survey. The survey was administered just before a medical procedure, a time when patients may be preoccupied. Additionally, privacy concerns, especially regarding sensitive issues such as reproduction or income, may discourage individuals from participating, even if the survey guarantees total anonymity. Another issue discussed in the literature is that smartphones and tablets have lower processing power, and respondents must operate on small touch screens, which can be perceived as inconvenient (Décieux & Sischka, 2024). Women awaiting their IVF treatment took an average of six minutes to complete the questionnaire. The questions with the highest rates of item non-response concerned income, employment, religiosity, and migration background. However, 87% of the questionnaires were completed in full.

4. Social Profile of Women and Couples Undergoing IVF Treatments and Perceived Stress

4.1. Socio-Demographic, Socioeconomic, and Treatment-Related Factors in the Context of IVF Treatments

In Table 1, we will describe our sample according to its socio-demographic, socioeconomic, and treatment-related characteristics. The mean age of the women undergoing IVF treatment was quite consistent with the most recent data available from the German IVF Registry, while the age of the men was slightly younger (Bartnitzky et al., 2024, p. 244). This is plausible because the IVF Registry collects data on treatment cycles, whereas our study focuses on first treatments at the selected fertility clinics. Thus, the women and their partners who had previously been treated at another fertility clinic were significantly older than the majority for whom this was their first treatment (81%). The women were mostly in their early 30s when they sought help and had a body mass index slightly above the normal weight range. About a quarter of the participants had a migrant background either through their own migration or that of their parents. More than half of the women, and slightly fewer of their partners, considered themselves religious to some extent, with fewer identifying as members of a predominantly Christian congregation. Consistent with research on intimate relationships (Burkart, 2018), the couples in our sample were homogamous in many respects, not only in terms of age, but also in terms of body mass index, migration history, and religiosity.

Table 1. Socio-demographic characteristics of the SOFIA-1 sample (mean or percentage, $n = 101$).

	Women	Partner
Mean age (*SD*)	35.2 (4.2)	36.9 (5.7)
Mean body mass index (*SD*)	27.0 (5.9)	26.9 (4.5)
Age group		
Up to 30	14.4%	9.7%
31–35	45.4%	39.8%
36–40	28.9%	25.8%
Older than 40	11.3%	24.7%
Migration background (own or parents)	25.8%	21.4%
Some level of self-assessed religiosity	54.1%	46.9%
Length of partnership		
Less than 5 years	28.7%	
5–9 years	37.2%	
10 years or more	34.1%	
Living together	96.8%	
Married couple	84.2%	
Biological child	15.8%	12.8%

The vast majority of our respondents were in long-term cohabiting partnerships and were married (84%). Interestingly, 16% of the women and 13% of their partners had at least one biological child. A closer look at the data shows that these children were primarily from previous relationships.

It is well established that the use of any form of medically assisted reproduction is highly socially selective both in Germany (Köppen et al., 2021; Passet-Wittig, 2024) and in other countries (Goisis et al., 2024). Social selectivity encompasses factors such as economic resources, education, and marital status. However, relatively little is known about the socioeconomic heterogeneity of those who rely on assisted reproduction. The participants in our sample tended to have more economic resources (Table 2), exceeding the levels generally reported for Schleswig-Holstein (Statistik Nord, n.d.). More than half of the women held an academic degree (technical college or university), while their male partners were slightly more likely to have a medium level of education. Almost all respondents and their partners were employed, mostly full-time. As expected, the partners exhibited a high degree of educational homogamy (Stauder & Kossow, 2021). Due to their elevated level of education and strong ties to the labor market, more than half of the couples reported a monthly net household income exceeding €5,000. Consistent with their economically privileged status, the percentage of women with private health insurance was slightly higher than the German average of around 10% (Verband der deutschen Ersatzkassen, 2025).

80% of the respondents were receiving treatment in Schleswig-Holstein and were living there, while the remainder were living in neighboring states. The majority of couples were living in small towns and rural areas. On average, it took them about an hour to get to the fertility clinic where they were being treated.

Table 2. Socioeconomic characteristics of the SOFIA-1 sample (n = 101).

	Women	Partner
Academic degree	50.6%	41.4%
Employed	96.6%	95.4%
Full-time employed	80.0%	84.3%
Monthly net household income		
less than €3,000	5.8%	
€3,000—less than €5,000	41.9%	
€5,000 or more	52.3%	
Private health insurance	12.4%	6.8%
Main residence		
Schleswig-Holstein	79.6%	
Mecklenburg-West Pomerania	8.2%	
Hamburg	6.1%	
Other	6.1%	
Size of the place of residence		
Less than 20,000 inhabitants	50.6%	
20,000—less than 100,000 inhabitants	24.7%	
100,000 inhabitants or more	24.7%	
Time needed to get to fertility clinic (one way)		
Less than 30 minutes	21.6%	
30—less than 60 minutes	45.4%	
60 minutes or more	33.0%	

Since women are the recipients of IVF treatments, the treatment-related factors (Table 3) are presented only for women. Almost 81% of the women in our sample were undergoing IVF treatment for the first time, with three-quarters of them in Lübeck and a smaller proportion in Kiel. While nearly 90% of the respondents rated their physical health as above average, they rated their mental health somewhat less favorably. Physical and mental health assessments have distinct dimensions and are therefore not strongly correlated. Notably, more than 45% of respondents reported experiencing high psychological distress due to their unfulfilled desire to have a child. When asked about the reasons for not getting pregnant, stress was the most frequently mentioned factor, followed by too infrequent sexual intercourse and the absence of their partner. Open responses mentioning biomedical reasons were less frequent. Examples of these reasons include endometriosis, tubal factor infertility, poor sperm quality in the male partner, and pre-existing chronic conditions. Many of the women had previously tried various methods to conceive, including taking folic acid, monitoring their menstrual cycles, and measuring hormones in their urine. Nearly 43% of the respondents had been trying to get pregnant for a considerable period of time, between two and four years, and 29% had been trying for more than four years, before considering IVF treatment in Schleswig-Holstein. Women who had been trying to get pregnant for four years or longer were more likely to have previously sought help from another fertility clinic than women who had been trying for a shorter period. All of the women rated their relationship with their partner as very satisfying or at least satisfying.

Table 3. Treatment-related characteristics of the SOFIA-1 sample (n = 101).

	Women
Fertility clinic	
Lübeck	77.5%
Kiel	22.5%
First treatment in a fertility clinic	80.6%
Self-perceived good and very good physical health	89.3%
Self-perceived good and very good mental health	73.9%
Extent of psychological distress due to unfulfilled desire for a child	
Low	26.9%
Moderate	27.9%
High	45.2%
Subjectively perceived reasons for non-occurrence of pregnancy (multiple responses; only showing the most frequently mentioned)	
Stress	36.3%
Too infrequent sexual intercourse	16.5%
Partner's frequent absence	6.6%
Methods used to conceive in the past (multiple responses; only showing the most frequently mentioned)	
Folic acid	82.8%
Menstrual cycle monitoring	76.3%
Measuring hormones in urine	37.6%
Duration of trying to get pregnant	
Less than 2 years	28.7%
2—less than 4 years	42.6%
4 years or more	28.7%
Relationship satisfaction	
Satisfied	27.7%
Very satisfied	72.3%

4.2. Stress and Psychological Distress in the Context of IVF Treatments

In this section, we aim to disentangle factors related to two subjective dimensions that are relevant in the context of IVF treatment: perceiving stress as the main reason for not getting pregnant and experiencing high levels of psychological distress due to an unfulfilled desire to have a child. These two dimensions are distinct and not strongly correlated. Given the small sample size, we only present bivariate associations that are statistically significant at the 10% level.

Women's perceptions of stress as the primary reason for not getting pregnant can be best understood in the light of social-psychological attribution theory (Weiner, 1985). It explains how individuals interpret the causes of events, particularly failures or setbacks, and how these interpretations influence their emotions and behavior. Women undergoing infertility treatment or experiencing difficulty conceiving often engage in

causal attribution to make sense of their situation. This, in turn, shapes their emotional responses, coping mechanisms, and overall perception of stress. When stress is perceived as permanent and uncontrollable, it can exacerbate anxiety and distress, potentially further compromising fertility. Social influences, such as messages from doctors, the media, or family members, often reinforce the idea that stress causes infertility or, in the case of social support, counteract it.

According to existing research, increased social loneliness during the assisted reproduction process may be due to infertility-related stress and stigma (Köksal & Goisis, 2023). There is also evidence that perceived social stigma and the physical and time demands of assisted reproduction are associated with higher stress and depression symptoms, whereas emotional support from a partner is associated with lower perceived stress (Gupta et al., 2024). Onnen-Isemann (2000) found in her early qualitative study of couples undergoing reproductive medical treatment in Germany that the associated stress had an extreme impact on their quality of life. For the couples who were interviewed, life without biological children was unimaginable.

In our sample, a few factors were significantly related to women's perception of stress as the main reason for their inability to get pregnant (Figure 2). If the woman's partner already had a biological child, she was more likely to perceive that stress was an obstacle to conception. This finding aligns with the attribution theory, as the woman's partner having a child may have reinforced her feeling that she was solely responsible for the couple's difficulties in conceiving. A woman's partner having an academic degree was also associated with her perception of stress-related fertility problems. We cannot fully explain this association, but it may be due to our upwardly biased sample. Conversely, women who perceived that causes other than stress (e.g., external factors such as medical issues) were decisive for their fertility problems were more likely to rate their relationship satisfaction as very high. We interpret this association as an indication of perceived social support from the partner, which contributed to lower stress levels. Interestingly, the few factors that appear to be related to women's perception of stress as a barrier to pregnancy are characteristics of the partner or relationship, but not, for example, women's age, which might indicate a "ticking biological clock."

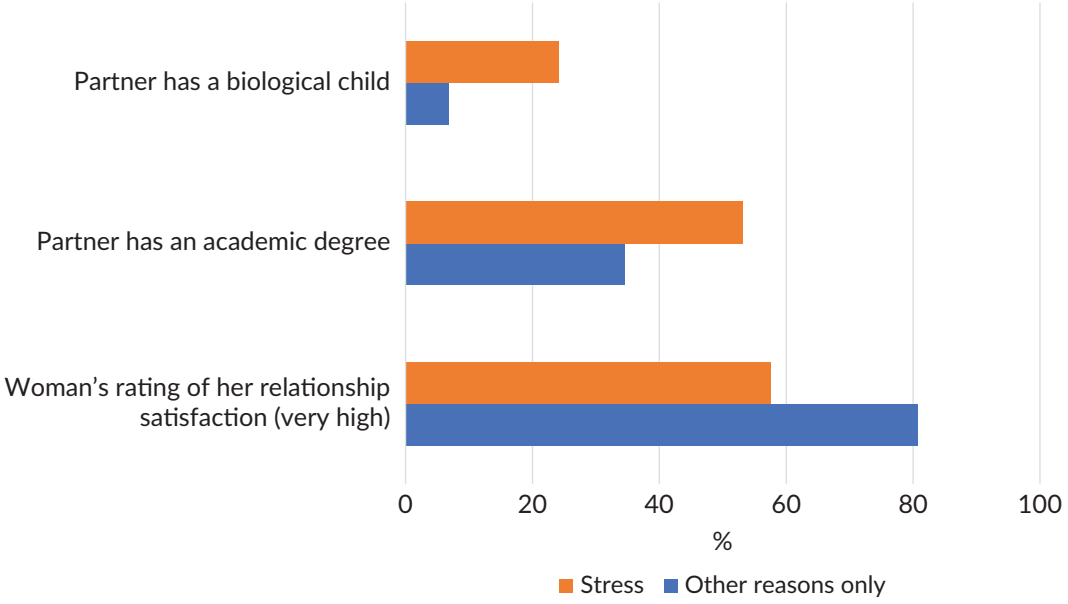

Figure 2. Association between selected factors and stress vs. other reasons as women's subjectively perceived main reason for the non-occurrence of pregnancy. Source: Data from the SOFIA-1 project survey.

More than 45% of female respondents reported experiencing high levels of psychological distress due to their unfulfilled desire for a child. The subjective experience of fertility problems is highly contextualized and profoundly shaped by the societal norms and cultural attitudes surrounding parenthood. In cultures where the concept of voluntary childlessness does not exist, the stigma and distress associated with infertility are likely to be greater than they are in Western societies. Women and couples who seek advanced medical treatments to address their fertility issues are often perceived as being more distressed than those who are more open to alternatives to biological parenthood (Greil et al., 2011). The level of psychological distress that women experience due to fertility problems is theoretically perceived at the intersection of gender, identity, and the body. Women's gender identity may be threatened by an inability to reproduce (Bell, 2019), as it may violate deeply held expectations of femininity and family life (Loftus & Andriot, 2012). The relationship between women's experience of fertility problems and elevated levels of psychological distress could theoretically be modified by alternative roles and resources. In this vein, McQuillan et al. (2003) found that in the US that infertile women who were involuntarily childless had the highest levels of psychological distress, regardless of the available resources. In rare cases, infertility can trigger existential distress, which is expressed as a total immersion in the process of becoming pregnant (Hoffmann, 2013). In Germany, nearly two-thirds of couples who underwent assisted reproduction therapy reported having no alternative vision for their family besides having a biological child. This lack of alternatives increased stress levels during treatment (Passet-Wittig & Schneider, 2020).

Not surprisingly, the length of time spent trying to become pregnant was positively associated with the level of distress experienced (Figure 3). Women who had been trying to conceive for at least two years were significantly more likely to report high rather than moderate or low levels of distress. To a somewhat lesser extent, this association also held for women who had previously been treated at another fertility center. It may seem counterintuitive that a positive association existed between very high levels of relationship satisfaction and elevated levels of psychological distress. The female respondents reported higher levels of relationship satisfaction when they also reported higher rather than lower levels of psychological distress. This may be because women felt particularly stressed by their inability to conceive when they had a highly satisfying partnership and perceived parenthood as important to their identity as a successful family member. One difficult-to-interpret finding is the relationship between the partner's religiosity and the woman's psychological distress due to fertility problems. Women whose partners were somewhat religious were more likely to report high rather than moderate or low levels of psychological distress. The small number of such cases did not allow for a more detailed analysis, but it is possible that perceived social pressure related to fertility varied by religious diversity as an expression of culture (Haug & Milewski, 2025; Milewski & Haug, 2020).

Figure 3 shows that some factors were associated with lower levels of psychological distress among women. These factors included self-perceived good or very good mental health, a high net monthly household income, and having a biological child. There was a strong relationship between women's perceptions of their mental health and their level of psychological distress due to unfulfilled fertility aspirations because the latter affected the former. Women in high-income households were more likely to report having relatively low rather than high levels of psychological distress. This may indicate the importance of economic resources in accessing or continuing medically assisted reproduction, which may have ultimately enabled the respondents to fulfill their fertility aspirations. Having a biological child while undergoing IVF was rare, affecting about 16% of the women in our sample (Table 1). When it did occur, it was associated with moderate or low rather than high levels of

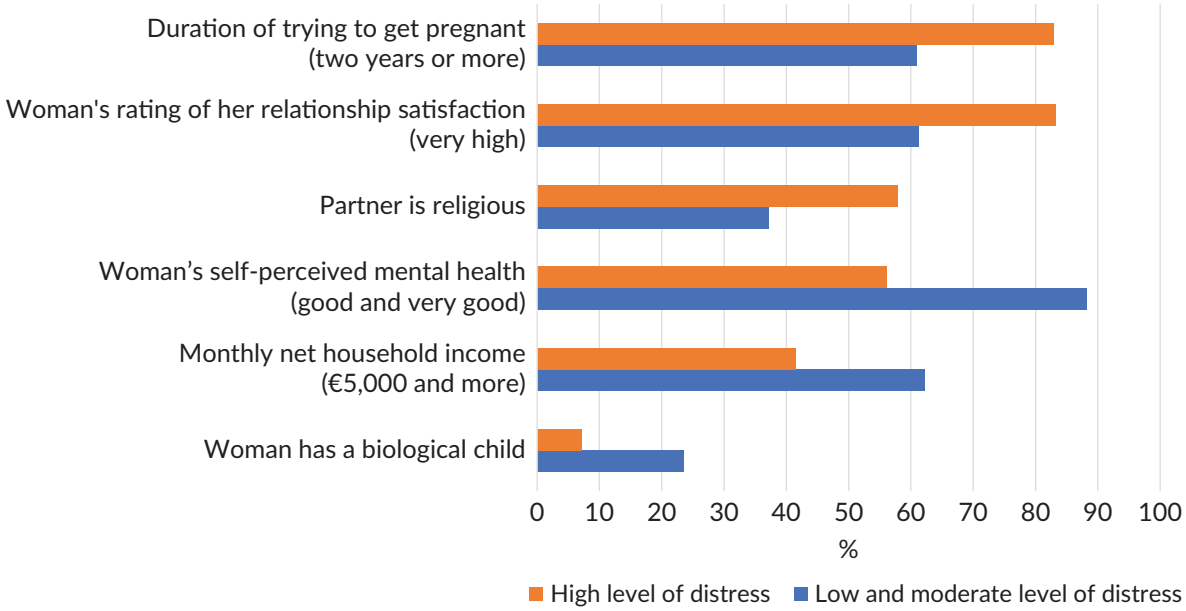

Figure 3. Association between selected factors and the extent of women's psychological distress due to an unfulfilled desire for a child. Source: Data from the SOFIA-1 project survey.

psychological distress. This finding can be best understood in light of identity theories, because women who were already mothers may have had more confidence than childless women in their ability to conceive and carry a pregnancy to term (Loftus & Namaste, 2011). Conversely, their identity as a biological mother may have protected these women from potential future failure, thus reducing their psychological distress (Neter & Goren, 2017). Taken together, individual, partner, and relationship characteristics were relevant factors associated with women's psychological distress due to unfulfilled fertility aspirations.

5. Conclusion

The SOFIA-1 study demonstrates the feasibility of collecting sensitive socio-demographic and psychosocial data from IVF patients through an anonymized, digitally administered survey embedded in the clinical setting. By focusing on women undergoing oocyte retrieval—a well-defined and standardized point in the IVF trajectory—this study ensured that the participants were surveyed at a comparable stage in their treatment journey. Using anonymous, voluntary participation without written informed consent is consistent with ethical standards and essential to fostering trust and protecting privacy. The high completion rate of questionnaires and acceptable response rates at two different sites indicate that this approach is not only logistically feasible, but also well accepted by patients. Thus, SOFIA-1 can serve as a methodological blueprint for future large-scale multicenter studies aimed at integrating socioeconomic and psychosocial dimensions into reproductive health research. Expanding this research across multiple locations and incorporating diverse patient populations would enhance the generalizability of the findings and allow for more robust conclusions regarding the factors influencing patient well-being. This is important because clinics vary in the amount and structure of the psychological support they offer. Gathering data from a wider range of settings may reveal whether these differences are linked to variations in patients' stress or unmet needs. Recognizing such patterns of diverse needs could provide valuable insights to improve psychosocial care and promote more equitable support practices across fertility clinics. However, we acknowledge that

developing a multicenter study design may require methodological adjustments, such as the tailored design method by Dillman et al. (2014), to improve response rates further.

In addition, this study sheds light on the socio-demographic factors and stress perceptions of women undergoing their first IVF treatment cycle at two fertility clinics in Schleswig-Holstein, Germany. It also identifies factors that influence how individuals perceive stress during this complex assisted reproduction journey. Our study provides initial evidence that many women experience significant psychological distress at the beginning of their IVF treatment, which likely increases over the course of treatment. For instance, we find that stress levels are elevated in women who have been trying to conceive for a longer period of time and in those who have previously been treated at another clinical center. Stress levels are likely to rise during treatment, as patients recognize the risks associated with fertility procedures and possible failure (Onnen-Isemann, 2000). Additionally, societal pressures surrounding biological parenthood, along with concerns about treatment costs, time commitment, and relationship strains, may further heighten stress. However, future research needs to assess the specific factors contributing to perceived stress in more detail.

Our research suggests that stressors are complex, involving individual, partner, and relationship characteristics. Existing tools that measure these stressors, such as broad assessments of stress and well-being, lack the specificity needed to fully address the IVF experience. Therefore, using a fertility-focused stress scale, such as the Copenhagen Multi-Centre Psychosocial Infertility research program (COMPI) questionnaire by Sobral et al. (2017), may provide a more nuanced perspective on how fertility issues impact daily life. This scale distinguishes between personal, marital, and social stress, offering a better framework for evaluating the psychological challenges of IVF. Future studies should adopt these specialized measures to enhance the accuracy, comparability, and applicability of stress evaluations in reproductive health research. Since stress perceptions are influenced not only by personal factors but also by partner and relationship characteristics, couples should be considered as a unit. Understanding how relationship dynamics influence stress levels can facilitate the development of more targeted interventions that address both partners' needs throughout the treatment process. Ideally, this would occur through ongoing, longitudinal follow-up with couples or individuals that enables us to better understand their reproductive journeys and how they cope with the possibility of not having a child after IVF treatment.

Our findings underscore the need for effective psychosocial support during IVF treatment. Previous studies (Thorn, 2020) have shown that IVF patients often experience significant emotional difficulties that can adversely affect their mental health and treatment outcomes. Our data emphasize the importance of incorporating psychosocial counseling and emotional support into fertility treatment programs to promote informed decision-making and emotional preparedness. Although health insurance companies may cover some IVF costs, patients often bear the emotional consequences of treatment. Gupta et al. (2024) emphasize the critical importance of social support. Their research shows that social networks can reduce stress and the risk of depression, especially for those who have undergone unsuccessful assisted reproduction. Offering specific support services, such as fertility counseling, can alleviate the emotional strain of IVF and enhance the overall patient experience.

Finally, as societal views of family formation shift, it is important to recognize that not everyone undergoing IVF treatment sees biological parenthood as the ultimate goal. According to scholars such as Passet-Wittig and Schneider (2020), a minority of individuals and couples are increasingly open to additional pathways to

parenthood, including adoption, foster care, or choosing a child-free lifestyle. Although IVF treatment remains a primary route to biological parenthood for many, it is crucial for fertility professionals to provide comprehensive counseling that addresses all options available to individuals who may not fit society's traditional reproductive expectations. This broader perspective on reproductive choice contributes to a more inclusive approach to reproductive health care that promotes personal agency and reduces societal pressures. Future research should consider the importance of questions about alternative paths to parenthood beyond biological ones to improve our understanding of the role of biological parenthood in the family formation process and its related consequences.

Acknowledgments

We would like to thank Sina Christin Löwe for her invaluable support in programming the online questionnaire in SoSci Survey. Her technical expertise contributed significantly to the successful implementation of our data collection. We also thank the anonymous reviewers for their careful reading and valuable feedback on earlier versions of this manuscript.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

Data from Official Statistics are available from the Federal Statistical Office of Germany (https://www.destatis.de). The SOFIA-1 study data are not publicly available because it is a pilot study for a larger multicenter study.

LLMs Disclosure

In preparing this manuscript, large language models (Grammarly, DeepL, and ChatGPT) were used for language and style editing to enhance clarity and coherence.

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Social Inclusion
2025 • Volume 13 • Article 10421
https://doi.org/10.17645/si.10421

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Open Access Journal

"No One Sends You Flowers": Social Norms and Patients' Emotional Journey Within Fertility Treatment

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Submitted: 24 March 2025 **Accepted:** 26 June 2025 **Published:** 28 August 2025

Issue: This article is part of the issue "Contemporary Changes in Medically Assisted Reproduction: The Role of Social Inequality and Social Norms" edited by Anne-Kristin Kuhnt (University of Rostock), Jörg Rössel (University of Zurich), and Heike Trappe (University of Rostock), fully open access at https://doi.org/10.17645/si.i523

Abstract

Patients undergoing fertility treatment, such as IVF, experience a range of emotions—hope, disappointment, grief, anxiety, jealousy, guilt, and anger. Through a sociology of emotions lens, we trace the emotional journey of patients in fertility treatment in Switzerland to understand subjects' experiences with medically assisted reproduction (MAR), and to highlight how societal and cultural norms and expectations shape the way they use and emotionally manage (failed) fertility treatments. The theoretical background is grounded in the notion of feeling rules (Hochschild, 1983) and associated concepts such as disenfranchised grief (Doka, 2002). Methodologically, the article is based on a qualitative interview study conducted with affected women in Switzerland (LoMAR) and a quantitative analysis of the first wave of CHARLS, a nationwide longitudinal study. Linking qualitative and quantitative data allows us to show the significance of occurring emotions as well as a deeper understanding of particularly strong emotions felt during (failed) treatment cycles that the research participants have disclosed in the interviews. Further, we argue that fertility treatment itself contributes to producing what we call "layers of loss," a cumulation of multiple losses experienced.

Keywords

emotion; feeling rules; grief; infertility; IVF; medically assisted reproduction; narrative interviews; reproductive failure; reproductive loss

1. Introduction

It is estimated that one in six couples are affected by involuntary childlessness worldwide (ESHRE, 2023). Other statistics estimate that 10–15% of couples have an unfulfilled desire to have children (Bispink, 2012). Thanks to in vitro fertilization (IVF) and assisted reproductive technologies (ARTs), many can be helped. According to the European Society of Human Reproduction and Embryology, the number of treatment cycles has grown by 5–10% annually (ESHRE, 2023). Around four million ART cycles are performed each year worldwide, with the number of babies born steadily increasing (ESHRE, 2023). However, the growth in successful treatments is only one side of the story. The other side can be described by a quote from Anna, one of our interviewees, about her multiple IVF cycles: "At the first attempt you think, yes, easy, that will work. And we'll do it. And I'm pregnant. It just wasn't like that."

With this study, we are interested in what is described here so succinctly and rationally with "it just wasn't like that": the multitude of experiences of loss and disappointment and emotional complexity that characterize fertility treatments such as IVF. While the social study of human reproduction "has often focused on reproductive 'success'...rather than on reproductive 'failures,' or experiences of loss" (Earle et al., 2016, p. 1), we draw on a growing body of work turning towards the drawbacks, failures, and losses within subjects' experiences of fertility treatment (Earle et al., 2016; Lo & Chan, 2017; Throsby, 2004). We use "reproductive loss" as an umbrella term that includes miscarriage, stillbirth, and perinatal and infant death, as well as all "kinds of loss relating to reproduction, including the loss of 'normal' reproductive experience" (Earle et al., 2016, p. 1). In line with a few other scholars, we argue that there is even an "extra sense of loss induced by...fertility treatment" (Lo & Chan, 2017, p. 308; see also Assaysh-Öberg et al., 2023). What's more, recent publications highlight IVF's low chances of success and its emotional and psychological consequences. They emphasize that *not* achieving a live birth is a common outcome of treatment, which is burdensome (Gameiro et al., 2024, pp. 1591–1592). As *The Economist* points out, "IVF is failing most women" since it subjects them "to cycles of dreaming and dejection" ("Making babymaking better," 2023, para. 2). Repeated and unsuccessful cycles of IVF result in loss, grief, shame, and isolation while the fertility industry is "profiting from vulnerability" (The Lancet Editorial Team, 2024, p. 215).

Our study is based in Switzerland, where access to ART is "restricted by the high cost and legislation, which is among the strictest in Europe" (Turuban, 2024, para. 1). In Switzerland, infertility—the "failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse" (WHO, 2024, para. 6)—affects around 15% of couples, and each year 3,000–4,000 patients start IVF/ICSI treatment (Turuban, 2024, para. 11), which involves hormone therapy to stimulate egg production, egg retrieval, and fertilization with sperm in a Petri dish, and possibly embryo transfer. Intracytoplasmic sperm injection (ICSI) is a procedure in which a single sperm is injected directly into the egg; although the fertilization procedure outside the body is different, for the patient, the treatment is the same as IVF. Ordinary health insurance does not cover IVF, making it hard for patients with low and middle incomes to access. In 2022, around 6,600 patients were receiving treatment. Figure 1 presents the success rates reported for that year from treatment to birth.

Embryo transfer occurred in 66.7% of all IVF/ICSI treatment cycles started in 2022 in Switzerland. In 24.5% of all treatment cycles, the embryo transfer resulted in a clinically confirmed pregnancy, and 18.4% of all treatment cycles resulted in a live birth. In-depth analyses showed that, in 2022, the average number of treatment cycles per woman who gave birth was 3.3. The average number of cycles for those who had not

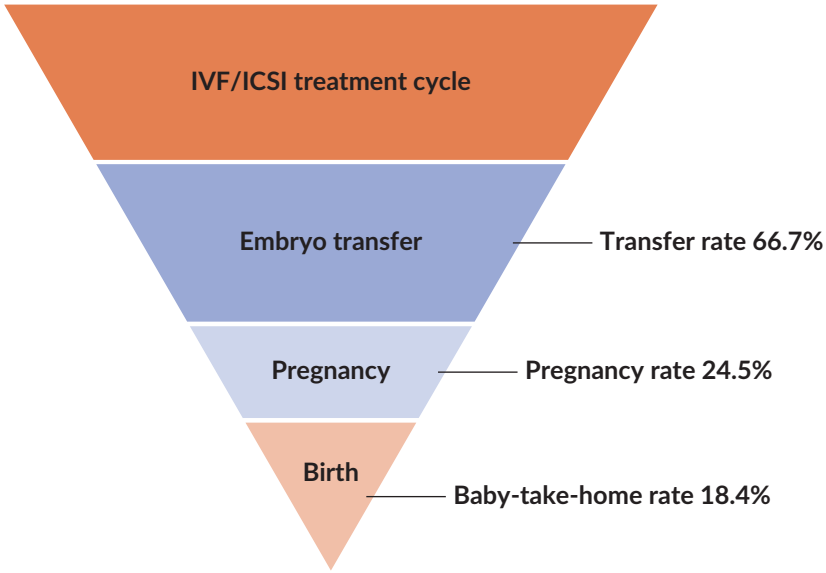

Figure 1. From treatment to birth: Success rates in Switzerland 2022. Source: FIVNAT & BFS (2022).

yet given birth by the end of 2022 is 6.3 cycles (own calculations based on FIVNAT data). Unsuccessful treatment cycles are a common experience, even if a child is eventually born.

It is against this backdrop that we explore the emotional challenges patients face while undergoing fertility treatment. Through a sociology of emotions lens, we trace the emotional journey of women who underwent fertility treatment in Switzerland to understand their subjective experiences with medically assisted reproduction (MAR). In doing so, we highlight how societal and cultural norms and expectations shape the way they experienced and emotionally managed (failed) fertility treatments. We draw on the metaphor of the journey (see also Huang, 2022) to describe the subjects' route through fertility treatment from one (emotional) experience to another, also because our interviewees used it. Greta, for instance, marks the OB-GYN's recommendation to visit a fertility clinic as the "start of [their] journey" and the pregnancy as "the end of this round trip after three years," while Doreen is just about to start her "IVF journey" at the time of the interview. While the interviewees identified different starting points, all of them used the metaphor in the sense of a trip towards a baby as a destination that included both planning and unexpected experiences.

2. Theoretical Background

2.1. Sociology of Emotions

In this article, we draw on the idea of emotions having a signal function (Hochschild, 1983). We use the terms "emotion" and "feeling" synonymously here, even though emotion is defined as a broader concept, encompassing subjective feeling, bodily experience, cognition, and behavioural elements (Turner & Stets, 2005, p. 2). Like seeing and hearing, feeling is a medium for experiencing the world. Emotions reveal the subjective meaning of what we see, remember, or imagine, and therefore provide orientation (Hochschild, 1983). We distinguish between the internal and external signalling functions of emotions. In subjective reality, following Berger and Luckmann (1991), feelings indicate the meaning of people, situations, and objects for the perceiving subject. As objective reality, feelings are shaped by social norms, social structures,

and social inequalities (Hochschild, 2024; for grief, see Jakoby, 2012). Through emotions, social issues such as domination, competition, dependence, inequality, connectedness, and norms are processed by individuals (Illouz, 2024, p. 15). Emotions can be understood as a dialogue between us and the world, as Illouz (2024, p. 18) has described so aptly, emphasizing their social and cultural embeddedness.

Emotions are influenced and constrained by social norms, values, and emotional "vocabularies," that is, a "name provided by culture" (Turner & Stets, 2005, p. 3). Feelings are subject to evaluation and legitimization. Feeling rules are social norms that frame feelings in specific situations. They link socio-cultural context to individual emotions since they outline to individuals how they should feel in a certain situation, or which emotional expression is appropriate (Hochschild, 1983). Emotional norms vary by situation, history, culture, social class, religion, race, and gender. However, there is often a discrepancy between what individuals feel and what feelings are expected. Individuals do "emotion work" (Hochschild, 1983) to resolve this discrepancy, an "emotional deviance" as labelled by Thoits (1990), and adjust their feelings to the respective norms.

In addition to situation-specific emotional norms, some emotions are deemed more desirable in a society. Especially in Western capitalist societies, an emotion culture strives for positive emotionality and pathologizes feelings labelled as negative, such as sadness and grief (Horwitz & Wakefield, 2007). Instead, happiness is elevated to the imperative of current existence (Cabanas & Illouz, 2019; Ehrenberg, 2004). This pressure to present oneself as a successful and happy individual leads to even stronger feelings of failure. Doreen, one of the interviewees, describes these normative assumptions as follows: "We live in a society that acknowledges…being successful, productive, and resilient, but it's not so common to grieve, to be vulnerable." The values Doreen addresses correspond to the "modern paradigm" (Harris, 2009) and the capitalist economy, which promotes success, productivity, competition, functionality, efficiency, resilience, and rationality. Loss and grief contradict these values and symbolize vulnerability, weakness, and emotionality, which is often linked to femininity and devalued. Grieving norms are embedded within this emotional culture. Grief needs to be quickly overcome, controlled, or processed. The aim is to restore functionality and recover from intense emotion (Granek, 2010). In other words: "Our high-speed neoliberal society is perhaps an exact antithesis of the grieving body" (Macdonald, 2020, p. 130).

2.2. Reproductive Loss and Disenfranchised Grief

In line with Hochschild's concept of feeling rules, Doka (2002) highlights socially legitimized mourning roles leading to disenfranchised grief among those denied the right to mourn. Disenfranchised mourners are not allowed to express their grief publicly and receive no recognition for their loss or social support. Losses are therefore social phenomena, as they gain social meaning and value only within the social and cultural context of their occurrence. This conceptual framework sheds light on society's power to define the legitimacy of a loss acknowledged, for example by legal regulations (Böcker, 2024).

Pregnancy losses are often not acknowledged (Lang et al., 2011). A common response in Western societies is the claim that the embryo or foetus "wasn't really a baby" (Layne, 1997, p. 300). Whereas intended parents may mourn an unborn family member already named, outsiders may consider the embryo/foetus mere "uterine contents" (Frost et al., 2007). Such rational terms and a lack of empathy lead to feelings of disenfranchisement. There is also a long cultural history in many countries of treating pregnancy loss in the same way as infertility,

namely as individual failures or punishments for past wrongs, leading to guilt among the affected parties. These normative reproductive scripts especially affect women, who are assigned the main responsibility for successful reproduction. At the same time, men face other challenges, such as gendered role expectations to show no feelings or weaknesses or a lack of social recognition for their grief after pregnancy loss (Obst et al., 2020).

Reproductive losses within marginalized populations are especially neglected. Miscarriages or stillbirths experienced by lesbians, trans men, or surrogates (Berend, 2012; Peel & Cain, 2016; Riggs et al., 2020), for instance, are less seen because their reproduction is not the expected social norm. Craven (2019) argues that LGBTQ people's reproductive experiences with pregnancy loss, infertility, and sterility have not received appropriate attention regarding the technological opportunities that have emerged for queer people to become parents. Similarly, although they face increased risks, losses among racial and ethnic minorities are less addressed in research (Boakye et al., 2025; Paisley-Cleveland, 2013).

Pregnancy also bears social and medical normative expectations regarding maternity. Layne, in her pioneering work *Motherhood Lost*, speaks of "narratives of linear progress," which she contrasts with the disruptive event of miscarriage (Layne, 2003, p. 59). Miscarriages contradict the medical norm of linear development from fertilization to the birth of a healthy baby. It also contradicts the ideal of a joyful pregnancy and maternity, described by Faulkner as the "happy-glowing-pregnant-lady-myth" (Faulkner, 2012; see also Browne, 2023, p. 6). Experiences of reproductive loss and infertility shatter these normative orders and expectations regarding the individual's predictable, coherent, and linear life path (Becker, 1994; Cunningham, 2014). On the contrary, subjects undergoing fertility treatment experience disruptions, setbacks, and failures, facing a range of strong and sometimes opposing emotions like hope, disappointment, grief, anxiety, jealousy, guilt, anger, and frustration.

2.3. Emotions in (Failed) Fertility Treatment

Many social science scholars have highlighted the "unintended consequences" and side effects of MAR (e.g., Layne, 2006). Feminist scholars in particular have criticized the pronatalist social pressure for childless women to use ART, the physical strain on the female body caused by hormone therapy or egg collection, and the social stigma and isolation around failing to reproduce naturally (Ravn, 2016). For example, Throsby (2004) illustrates, in her pioneering book *When IVF Fails*, how much discursive effort people whose IVF treatment had failed had to make to justify their use of ART, because conceiving in a way "not natural" was considered neither normal nor reasonable.

In an early sociological study, Nave-Herz et al. (1996) revealed the emotional complexity of IVF (see also Onnen-Isemann, 2000). After the initial "shock" at the diagnosis of infertility, couples experience different feelings, such as anger and rage, guilt and shame, as well as isolation, depression, and grief. A characteristic feature of the IVF experience, which we draw upon in Section 4.1, is a cycle of hope, disappointment, and new hope for the next attempt. According to Sorg and Fränznick (2002, p. 90), the hope that each attempt may have a positive outcome creates a "treatment pull" (see also Franklin, 2022). In addition, subjects experience a loss of control over their own fertility and treatment dynamics as well as social isolation from friends and families with children (Fränznick & Wieners, 2001; Imeson & McMurray, 1996).

While we are interested in the social science perspectives in this article, the medical-psychiatric lens dominates research on infertility and the emotional impact of IVF treatment on individuals (Greil et al., 2010). Especially studies including the experience of pregnancy loss focus on psychological disorders such as depression, trauma, chronic grief or anxiety disorder, as well as despair, loss of hope, and guilt (e.g., de Castro et al., 2021; Hammarberg et al., 2001; Meier et al., 2024; Stanhiser & Steiner, 2018). Short-term effects associated with unsuccessful treatments are anxiety, low self-esteem, depressive feelings, and poor relationship quality (for a review, see Hammarberg et al., 2001). These studies focus on psychological disorders, coping strategies, and positive influence factors, but not on emotions beyond pathologies and their societal roots.

3. Data and Methods

This article is based on a qualitative interview study conducted with affected women in Switzerland and a quantitative analysis of data from CHARLS, a nationwide longitudinal study on assisted reproduction. Linking qualitative and quantitative data allows us to show the significance of occurring emotions as well as a deeper understanding of particularly strong emotions felt during (failed) treatment cycles that the research participants have disclosed in the interviews.

3.1. Qualitative Interview Study

The qualitative study on reproductive loss and bereavement in medically assisted reproduction (LoMAR) examines the biographical, social, and cultural conditions of loss experienced by intended parents before and during fertility treatment in Switzerland. Based on narrative interviews with affected women, the social conditions and meanings of loss and bereavement, as well as ways of dealing with them within the context of fertility treatment, were examined. Interviewees answered our public call for participation shared via social media and the citizens' science panel of the University Research Priority Program (URPP) "Human Reproduction Reloaded | H2R" at the University of Zurich. The call addressed people with experience of loss or bereavement within their fertility treatment in Switzerland and who were willing to talk about it. Only individuals identifying as female answered the call and they participated without partners. One woman had gone to Spain, where egg donation is permitted, after treatment with her own eggs in Switzerland failed.

Although interview research has limitations when studying emotions, because talking about emotions is not the same as feeling them, and because it is not possible to distinguish between the actual lived experiences and narrated life story, interviewing is still a social situation where emotions can be sensed and observed: they and we smile when they tell us something funny or absurd, or sigh if they have something hard to tell. To grasp these emotions, non-verbal expressions and hesitations (signalled with "(.)") were included in the transcriptions and considered in the analysis. Furthermore, the narrative approach allowed us to link emotions in fertility treatment with social norms, because the narrative accounts also represent, besides subjective experiences, the wider social and cultural expectations, norms, and values these are embedded in (Przyborski & Wohlrab-Sahr, 2014).

In 2023 and 2024 we conducted seven interviews via Zoom with affected women (see Table 1), six of whom were mothers at the time of the interview. Each lasted between 48 and 125 minutes. The interviewer, who was experienced in sensitive social research (Böcker, 2025; Delaunay et al., 2025), began with an

open-ended question asking respondents to tell the story of their fertility treatment, before asking in a flexible format about when they first realized they wanted a child; the beginning, process, and type of fertility treatments; (pregnancy) losses and the times afterwards; ways of dealing with embryos/foetuses; and farewell and remembrance practices. In closing, we asked respondents to evaluate their past experiences, voice wishes and regrets, and share their hopes for the future. All interviews were conducted in German, recorded and transcribed verbatim, and the transcripts were analysed through sequential hermeneutics (Maiwald, 2005) in an interpretation group of two to five trained social scientists. Selected sections were translated into English for this article. Ethical approval for this study was obtained from the Faculty of Arts and Social Sciences' Ethics Committee (University of Zurich).

Table 1. Sample LoMAR: participants' social characteristics and reproductive losses.

Name	Born	Civil status	Children	Pregnancy losses	Duration of treatment
Anna	1976	Single/divorced	2	2	7 years (CH/Spain)
Beate	1986	Married	1	3	4 years
Chris	1990	Married	2	2	3 years
Doreen	1991	Married	None	None Unexplained infertility	Ongoing
Eva	1983	Married	1	1	2.5 years
Franziska	1974	Married	4	None Implantation failure	5 years
Greta	1989	Single	1 (+8 months pregnant)	2 (+1 ectopic pregnancy)	1.5 years

3.2. Swiss Longitudinal Study on MAR

The qualitative study is supplemented by a quantitative analysis of the first wave of CHARLS—Swiss (CH) Assisted Reproduction Longitudinal Study—conducted within the framework of the URPP H2R. CHARLS is the first Swiss panel study collecting data on attitudes, experiences, and beliefs related to assisted reproduction and family. The first wave was collected from March to August in 2023. The study employed a disproportionately stratified sampling approach, drawing a sample of 20,000 individuals from the Swiss population register. The population of interest comprised all individuals aged 18 and above with permanent residence in Switzerland. The sample was stratified according to the three language regions and, within these strata, further stratified by gender. The language regions included the three main languages: German (including Romansh), French, and Italian. Individuals were then selected at random within each stratum. The target population was contacted via postal letter and invited to complete the survey either online or in paper format. The response rate was 26%, yielding a total of 5,256 respondents. However, certain selection tendencies were apparent. For example, the participation rate of Swiss citizens was significantly higher than that of non-Swiss citizens, and participation rates were higher in urban compared to rural areas. Additionally, there appears to be an education bias, with more highly educated individuals being overrepresented in the resulting sample. The comprehensive questionnaire covered a wide range of topics, requiring an average of 40 minutes to complete.

For this study, we included survey questions on the experience of miscarriage, associated emotional and social responses, as well as mourning practices. In addition, the use and duration of ART treatment and the duration of infertility were surveyed.

4. Findings

The findings of the qualitative study show that patients experience and navigate complex emotions, also with regard to societal norms and expectations. In each of the following sections, we present fertility treatment's structural characteristics, occurring emotions, and the social norms and expectations framing them. Although we do not claim that these emotions are felt by all subjects in IVF treatment, we argue that the treatments themselves bring about these kinds of emotionally challenging journeys. Subjects enter a cycle of hope, pressure, and often disappointment (4.1) in which, if they do not get pregnant, each round adds another layer of loss and grief (4.2). Although the losses are painful and "real" for the subjects, they are invisible and intangible within their social surroundings (4.3). The losses then provoke further emotions such as anxiety in subsequent pregnancies, guilt about reproductive failure, and jealousy, but also anger about societal expectations (4.4). In support of our argument, quantitative data shows that people who have used ART report higher levels of sadness, anger, guilt, and fear of losing another pregnancy after miscarriage than those who have not (4.5).

4.1. Cycles of Hope, Pressure, and Disappointment

The emotional structure of IVF treatment is one of a recurring cycle of hope and disappointment, as summarized by Greta, one of the interviewees: "On the one hand, it was very burdensome, but on the other hand, you just could not let go." The driver of undergoing treatment procedures, the central feature of which is repeatability (Hoffmann, 2017), is the hope of next time getting pregnant. Franklin (2022, p. 9) referred to IVF as a "hope technology," thus implying the "treatment pull" (Sorg & Fränznick, 2002, p. 90), causing patients to remain in the process and opting for further cycles. While doing so, subjects are under time pressure, since their "biological clock" continuously lowers the chances of conceiving, heightens the risk of miscarriage, and, thus, does not allow for a long pause after failed cycles. Other reasons for staying in the process, for example reported by Franziska, were the feeling of agency through each new treatment cycle as well as the motivation to not have to reproach oneself later—and to not let oneself be reproached. Hope is a central coping mechanism (Bernet et al., 2025, p. 5) for dealing with the uncertainty, grief, and stress of IVF treatment. It is both the cause and effect of every new attempt.

Reaching certain stages—such as an embryo transfer or a positive pregnancy test—are framed as small successes, even when implantation eventually fails. They are seen as indicating potential and being "almost there" (Throsby, 2004, p. 62). This hope is also encouraged by clinicians, as Beate emphasizes: "They also say, you just have to try, try, try….If you can get pregnant, you have such, such a big chance for a child." Once in the process and having had initial successes, patients tend to push their personal limits regarding how far they would go. Chris, for instance, reflects on her decision to continue: "I've always said that, for me, it [IVF] is the cut-off point. But when the time came, I threw that overboard and said, no, somehow, I can't let it go." In this context, a miscarriage can also be a driver to continue: "Up to that point we had always said: would be nice if it works, then we do have children. If not, then we don't. After the miscarriage it was clear to me, I want to try everything possible" (Anna). This echoes the findings of the quantitative study by Beringer and

Milewski (2024), showing that the intention to have a child increases after miscarriage. Pregnancy losses can actually restore hope and let intended parents carry on because they are a sign of the ability to become pregnant in the first instance. Due to its cyclical form, the fertility treatment itself contributes to producing a series of losses that pile up to what we call "layers of loss," a cumulation of multiple losses experienced.

4.2. Layers of Loss and Grief

4.2.1. Before Treatment: Loss of Reproductive Normality

Before eventually receiving fertility treatment, people frequently have a long history of trying to conceive. The starting point of the journey is an often long-term phase of involuntary childlessness. CHARLS data shows that almost 50% of ART users report a period of two to five years of trying before the treatment, and 12% report a period of more than five years. This means that even before starting medical treatment, there are experiences of loss, possibly even miscarriages. For some, the fact that they have not conceived naturally is the first crack in the wall of what is perceived as reproductive "normality." Doreen, for example, starts her story by saying she had an unthinking, normal expectation and wish to have children:

> Doreen: I know that as a young woman, as I was growing up, I thought, yeah, I want four kids too, just like my mum….We tried for six months, and I would say with lots of energy and fun and, you know, it was really a good time. And I think after about six months, eight months, uh, I was like, "uh," I know that from looking at statistics…most couples fall pregnant and 80% of couples fall pregnant naturally in the first year….I think for me, one of the…distressing moments was hitting one year. Because that was in my mind,…the fork that meant, uh, we're no longer in the 80%, and that was hard. Like: uh, REALLY? At the time, I was 30 when we started trying….I expected: Yeah, by 31 I'll be pregnant, and I wasn't. You can hear it in my voice. I'm like, that was the first uh [19 seconds pause], uh. [voice breaks, cries].
>
> Interviewer: Just take a moment.
>
> Doreen: Yeah, sure-sure. [19 seconds pause] That was one of the first, uh, moments when we realized that it wouldn't necessarily be (.) such a straightforward journey.

The first distinct moment of "reality hitting" was when she and her husband did not conceive naturally within one year of trying, and Doreen realized she did not belong to the majority ("the 80%") that follows the "normative life-course trajectory" (Earle, 2014, p. 151). This marked the beginning of an arduous journey. In the quote, Doreen also mentions "lots of energy and fun" she and her husband had while trying to get pregnant, presenting herself as initially light-hearted, which contrasts all the more with her growing distress.

People who identify as future parents suffer a "loss of self" (Charmaz, 1980; Marris, 1986) through infertility. Not only people, objects, or past circumstances can be mourned, but also previous expectations regarding the future. Thus, infertility or early pregnancy loss are associated with the "loss of possibility" (Frost et al., 2007), "loss of promise" (Ironside, 1996), or an "unlived life" (Scott, 2019) which refer to the disruption of the perceived identity as a mother or parent. As Doreen herself summarizes in the following interview sequence:

> We have not lost a baby, but there is a feeling of loss connected to maybe a vision that you had for your life, a vision you had for yourself as mother, a vision you had for your husband….I started to realize, we can also grieve for versions of ourselves, like the version of me as a mum, the version of us as parents.

At the same time, our interviewees are aware of the feeling rules, as Doreen points out: "It is not the kind of grief that is maybe so socially accepted, understood, empathized with, because no one sends you flowers…when you don't get pregnant." In other words, in social everyday life, the grief over infertility is hidden.

4.2.2. Non-Developing Blastocysts and Implantation Failure

Before IVF is performed many patients receive less invasive treatment to support fertility, such as hormone therapy or insemination, which, of course, can be unsuccessful as in the case of two interviewees who almost used the same phrasing: "We had three inseminations in total, all of them did not work" (Greta); "we did seven inseminations, all of them unsuccessful" (Franziska). The next possible step of treatment is IVF. Starting a more invasive or costly treatment can be seen as reaching another unplanned yet necessary stage in the reproductive journey. Contrary to the perception of the IVF process as continuous, each treatment stage represents an observable "hurdle" that must be overcome to move forward (Franklin, 2022, p. 129): Each stage can fail and evoke loss and accompanying emotions, which makes IVF a "serial failure to progress" (Franklin, 2022, p. 25). There may not be enough or good egg cells, or no "good" embryos develop. Even if the embryo transfer was successful, it may not implant (in medical terms: implantation failure; see Meier et al., 2024). Chris describes the prolonged loss beginning from egg retrieval:

> Of course, that was accompanied by frustration and sadness. We had nine eggs. In the end, one was left which was half-developed. However, by the day it should have been used, it was no longer functional. Then I went home crying.

The embryos in Eva's case were transferred but did not implant: "Just in October we made a transfer, with one of the *good ones*. It didn't work. Then we did a second transfer…. Again, that also didn't work." These near successes intensify the emotional experience: Because they bring patients very close to pregnancy, the disappointment, frustration, and sadness are all the greater when a treatment is not successful. As Franklin 2022, p. 176) points out: "Nearly succeeding can be even worse than never coming close to success, as the hope has come even closer to becoming a reality, and the resulting loss is that much more devastating."

Visualization techniques reinforce the early attachment to embryos even before implantation (de Lacey, 2017; Millbank, 2017). Some fertility clinics provide photos and videos of the IVF embryos to the woman or the couple. Anna, for instance, watched such a video of her most "promising" pre-implantation embryos (called blastocysts) and "kind of fell in love with [embryo] eleven. I know it sounds kind of weird. And not that I see it as a child, but for me it was somehow clear that eleven belongs to me, too." The interviews further suggest that the embryo transfer is sometimes already perceived as "being pregnant" (Franziska).

4.2.3. Recurrent (Biochemical) Pregnancy Loss

After embryo transfer, patients wait for ten days before having a pregnancy test. During this time, even a slightly increased level of the pregnancy hormone HCG raises hopes. Anna speaks of having gotten

"a half-positive pregnancy test, as such a biochemical pregnancy" on her third attempt, only to see it vanish shortly after. Similarly, Beate's account reveals how much hope, anxiety, and uncertainty early pregnancy testing involves (see also Ross, 2018): "The test somehow showed a very faint [positive result] but it was nothing, it was still very uncertain…and then I did a test every day with these cheap [pregnancy] tests." This pregnancy testing and reporting of early positive results within the routine of frequent daily medical monitoring creates a new form of reproductive loss which, historically—and otherwise—would not be perceived as such.

Furthermore, pregnancy losses can occur in later weeks of gestation. Miscarriages are very physical and invisible forms of reproductive loss (see also Section 4.3). Of course, even later losses such as stillbirth, perinatal, or neonatal death may occur, which together with the experience of infertility may become a "reproductive trauma" (Bhat & Byatt, 2016), leading to symptoms of depression, anxiety, and post-traumatic stress disorder. In our study, however, no respondent suffered any of these late-term bereavements. Beate, who at the time of the interview had had three miscarriages, describes her recurrent losses as "really painful," just like Greta, who also states it had been "unimaginable that it wouldn't work this time. When it happened again, it really completely devastated me. Because I had thought, that just wouldn't happen so soon after another." In contrast to Greta's shock of "it" having happened again, others, as we will show in the following section, fear exactly that.

4.2.4. Beyond and After IVF: Post-Treatment Emotions

Despite happiness at the birth of their child following successful treatment—as Anna puts it: "[child's name] was there, I was totally happy"—for our interviewees the strain did not end there. For example, they felt anxious and worried during subsequent pregnancies. Against the backdrop of previous experiences, they could not enjoy being pregnant, they were afraid of bleeding (which reminded them of menstruation or the threat of pregnancy loss), or anxious about losing the foetus. Anna, for instance, says she "just got through it" and "panicked the whole pregnancy that something would go wrong." Similarly, Chris reveals: "I wasn't such a happy pregnant woman….I just hoped it would last. Yes, I was happy. [But mainly] I've been upset, I've been sad. It wasn't so enjoyable for me. It's just been like survival." Given this damning overall judgement ("like survival"), including "happy" in her list of feelings during pregnancy could be seen as emotion work: She is still trying to meet the feeling rule of being "a happy pregnant woman." Similarly, Greta, who is eight months pregnant at the time of the interview, admits feeling the "wrong" way: "Great joy never came, to be honest. I *am* happy, but this is also always mixed with fear. I have always been terribly afraid of the [medical] appointments." These statements illuminate the normative assumptions and the ideal of a happy "glowing" pregnancy (Browne, 2023; Faulkner, 2012; Layne, 2003).

Studies confirm the concern and anxiety about the survival of the foetus and the health of the child after ART treatment (e.g., Hammarberg et al., 2008). The narrative interviews further showed that some are still troubled by memories of loss, even when they have children at the time of the interview. Beate, whose child also attends the interview, for instance, says about the lost embryo: "I still think of it. Some of the feelings are still there…a stab in the heart, just like that." And Anna, who has two children, evaluates: "I wouldn't say: If the baby is here, everything is good. You can deceive yourself for a while but, I think, you really have to work through certain things."

All in all, the interviewed women went through a very long and exhausting phase of recurring disappointments, losses, and strain. Their fertility treatments meant enduring years of hardship, as Eva simply states: "It took four years before we were able to take our child home with us."

4.3. The (Im)Materiality and Invisibility of Pain and Loss

The losses described above are painful and "real" for the subjects and have a dual characteristic. Beate, for example, describes the void after a miscarriage as both physical and emotional: "It was like such a huge void in my belly, as if I had such a big wound. And apart from that, it was really painful, too," and she also refers to another aspect of loss, "the hope that you might lose." Similarly, Greta, who suffered an ectopic pregnancy and subsequently two miscarriages, refers to this double characteristic:

> During the second miscarriage…I really bled and had contractions, and it was already very painful. It took me quite a while to deal with that, I would say. Or this *feeling of grief* over…the prospect of a child.

At the same time, Greta emphasizes that she primarily mourned that "it still hadn't worked" rather than the pregnancies themselves:

> This might sound a bit stupid, maybe, but the pregnancies in themselves, maybe let us call it "the babies," I could always close that [chapter] relatively quickly. Instead, there really was grief about the fact that it still hadn't worked, that was the most burdensome [—more] than thinking that these two, erm, pregnancies are gone.

Thus, unlike the emotional loss of a significant other like a family member or friend, a miscarriage is also a *physical* loss: accompanied by bleeding, cramps, severe pain, or invasive medical procedures such as a curettage.

Despite this emotional and material reality, pregnancy losses are socially invisible in at least two ways. Firstly, others in the social environment might not have heard of the pregnancy, let alone have started a relationship with the unborn. Anna, who had followed the cultural three-month rule of not communicating a pregnancy, recalls the awkwardness of informing her boss about her miscarriage: "I lost the child you didn't even know I was pregnant with." Another reason for the invisibility is that there is no baby, no material manifestation of the bereavement felt. Some interviewees struggle with the absence of a foetal body because it could represent their bereavement. There is literally no*body* to make the loss "tangible" for third parties such as partners, or people in the wider social surroundings.

The status of the blastocysts or embryo is unclear, something between "human tissue," an object, and a wished-for "person" (de Lacey, 2017, p. 398). The end of an early pregnancy is shaped by this ambivalence, illustrated by Chris's powerful account of her first reaction: "Out of reflex, I simply threw it into the toilet and flushed it. Where I thought afterwards, oh, actually I could have buried it." Often, though, there is no perceivable embryo and no material to deal with. Anna, for instance, refers to the procedure in the clinic after the loss of her early pregnancy: "No one ever asked me if I wanted the material." This absence was also confirmed by the CHARLS data: 45% of respondents do not know what happened to their miscarried embryo and 39% say they lost it in the toilet (multiple answers possible).

While the embryo does not count morally, legally, or socially as a human person, the intended parents already have a relationship with them (Lupton, 2013). Beate defines her miscarried embryos as children ("it was simply my child from the very beginning") and cites things other people said, such as "you'll get pregnant again," which disenfranchised her grief. This shows a discrepancy between her own definition of having lost a "child" and the reactions in her social environment. Her grief over early miscarriages is therefore "disenfranchised" (Doka, 2002) and delegitimized in comparison to "real deaths" (Lupton, 2013). Doka's concept raises awareness of the diversity of social validation and support for bereaved people, which can vary depending on the category of loss (Jakoby, 2015). Not all losses are considered grievable (Butler, 2010); instead, they depend on the normative recognition of life as a prerequisite for the social recognition of a loss of a person. The discrepancy of meanings and feelings attached to the object of loss also exists between partners; Anna described how her ex-partner, who did not attend the clinic with her, said: "Don't be silly. This was no child. This was just a 'blob.'"

The material reality of pregnancy losses also highlights the bodily experience and burden of IVF treatment for the women concerned. They go through hormone therapies (tablets, injections) and their side effects, ultrasound examinations, uteroscopy, invasive procedures such as egg retrieval, blood testing, or other gynaecological tests, and surgery. Doreen describes a particularly painful experience:

> The insemination…was very emotionally triggering because I didn't expect my physical reaction…she injects it and my body just has this really intense reaction, like instant cramping, obviously trying to get this *liquid* that shouldn't be there out. I remember feeling hot and cold and sweaty. I almost fainted….That was the worst experience I had, because my body reacted in a way that I didn't expect, and you feel very vulnerable in that moment.

It can be argued that "emotions are intimately connected to the body" (Turner & Stets, 2005, p. 3), and thus intensified by the bodily experience, the loss of control over the body, and the physical materiality of loss. Emotions and bodily processes are linked, for example, the feeling of disappointment, anger, or sadness some people experience when menstruation returns. Again, it must be noted that these are not one-off events but are experienced several times. Franziska, for instance, reports a total of seven unsuccessful inseminations, each adding to the layers of loss. Extreme experiences that cannot be controlled also mean a loss of agency for the reproductive subject. One way to regain it, for Doreen, is to retreat from the physical and mental burdens of the treatments for a moment: "My body needed a break. I needed a break. We needed a break to not just talk about trying to get pregnant." In contrast, Anna avoided taking a break because, until she had a baby, she felt she would not have the emotional capacity to deeply engage with the accumulated trauma and pain.

4.4. Still Feeling Reproductive "Failure": Guilt, Anger, Jealousy

Infertility and miscarriages often evoke guilt in the women affected (Adolfsson et al., 2004; Taebi et al., 2021). In our study, pregnancy loss brought a doubled guilt of reproductive failure. As Chris puts it: "I just blamed myself that I *also* managed to, I don't know, kill or lose our child." The linguistic marker "also" refers to both a guilt at not being able to get pregnant naturally, first, and not being able to keep a pregnancy even after IVF. Studies document internalized guilt about pregnancy loss and treatment failure, which is perceived as "body failure" (Browne, 2023; Carson et al., 2021; Meier et al., 2024). Affected women blame themselves and search for reasons, including transcendental punishment. Greta, for instance, after three pregnancy losses in a row, wonders if she is being "punished for something" and feels "the universe wants to say to them, they should

just leave it at one child." Beate asks: "What is wrong with me, what's wrong with my body?" These notions of self-blame reveal societal expectations about childbearing and (biological) motherhood, forming the core of women's determination (Neyer & Bernardi, 2011, p. 165) and the equation of womanhood with reproduction and nature. These examples show how social and cultural values and supposedly individual feelings of guilt are interwoven.

A frequent but underemphasized emotion in the interviews was anger. Subjects were angry about the medical treatments, the sense of helplessness, and loss of control, and retrospectively looked back at missed chances. Anger is not an emotion with female connotations (Simon & Nath, 2004) and is neglected in the grieving and bereavement process (Ironside, 1996). After a curettage, Greta developed a condition that inhibited the build-up of endometrium (thus preventing conception):

> It was very difficult for me….After all these treatments I was often very, very angry, because I somehow had the feeling, erm, now they [laughs], as stupid as it sounds, broke me in the hospital and now they've left me to it. Because, in Switzerland, you have to bear all the costs yourself for all these treatments…which is incredibly expensive.

Greta blames the medical and social health care system, but her laughter and apologies reveal that she is still vulnerable and hesitates to publicly express her anger as it could be considered somehow inappropriate. Anna reveals the patient's inability to complain and powerlessness in the face of clinicians: "You are angry, but you must act carefully, since you are afraid; otherwise they will judge you and…not optimize [your treatment]….You are completely at their mercy." With hindsight, there is anger about missed opportunities and regret for (supposedly) wrong decisions, as Chris puts it: "I should have gotten pregnant earlier. Why did I do this doctorate? But unfortunately, you can't change that." These regrets and associated feelings are tenacious.

Jealousy is a common feeling when friends, family members, or acquaintances communicate their pregnancies. Beate admits: "It's sometimes still difficult to be happy, even though I have a child, too." Her statement reveals the challenge of meeting the normative expectations of being happy for everybody who is pregnant. It also shows that jealousy is not just felt towards others who are having a child, but also towards mothers who were able to conceive naturally or who already have another child. She also refers to another feeling rule, to act authentically within personal relationships: "You should be happy no matter what, and then you don't fulfil it because you don't feel it. You're not happy in the moment." To avoid this dilemma and emotional deviance, in Thoits' (1990) terms, and because they cannot or do not want to invest the emotional work necessary to overcome jealousy, they instead withdraw from these social contacts. At the same time, while Beate states "even if you think: Oh, I don't want to have this feeling," she appreciates the signalling function of jealousy, which, for her, "is a strong feeling" that "conveys what's important" and of "value" and keeps the connection with her lost embryo.

4.5. The Impact of ART Use on Emotions After Miscarriage

The CHARLS data shows that people who used ART have different miscarriage experiences than those who did not. Multiple linear regression was used to examine the association between the use of ART and emotional distress for those who have suffered a miscarriage. Coding of the independent variables was

accomplished as follows: ART use was coded as a binary variable (1 = at least one method used, 0 = no use). Technologies included: insemination, IVF/ICSI, sperm/egg cell donation, PGD (pre-implantation genetic diagnosis), cryopreservation/egg freezing (multiple answers possible). Control variables were age and the existence of children: age was transformed into decades (Age/10). Having children was a binary variable (yes/no). The surveyed items for the dependent variables are shown in Figure 2.

> The following list contains statements from people who have also had to deal with pregnancy loss. Please indicate how well these statements describe your thoughts and feelings. There are no right or wrong answers. Likert scale: (1) *strongly disagree*; (2) *disagree*; (3) *neither disagree nor agree*; (4) *agree*; (5) *strongly agree*
>
> *I am sad. / I feel the need to talk about the loss. / I feel alone. / I think I have got over the loss well. / I feel guilty. / I feel anger. / I am afraid of losing another child.*

Figure 2. CHARLS survey question and items on emotions after pregnancy loss. Notes: For reasons of sensitivity, the last item asked about the fear of losing another child, not another pregnancy; this probably influenced the responses of those who did not imagine miscarriage as the loss of a child.

Table 2 shows that the use of ART is correlated with more intense feelings of sadness, guilt, and anger as well as a greater fear of losing another child after experiencing a miscarriage.

Table 2. Multiple regressions of ART use on emotions after pregnancy loss.

Variables	Sad	Lonely	Got over it well	Guilty	Angry	Afraid of another loss
Used ART	0.250*	0.212	−0.129	0.208*	0.387***	0.361**
	(0.132)	(0.151)	(0.108)	(0.121)	(0.138)	(0.180)
Age/10	0.00244	−0.0466	−0.0498	−0.0893**	−0.118***	−0.296***
	(0.0402)	(0.0457)	(0.0327)	(0.0368)	(0.0418)	(0.0533)
Has Children	−0.191	0.271	−0.317**	0.489***	0.282	0.126
	(0.173)	(0.197)	(0.143)	(0.157)	(0.180)	(0.227)
Constant	4.325***	2.398***	4.890***	1.554***	2.155***	4.294***
	(0.306)	(0.350)	(0.251)	(0.279)	(0.318)	(0.403)
R^2	0.008	0.013	0.016	0.046	0.043	0.076
n	537	522	535	529	526	495

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Source: Own calculations based on CHARLS 2023.

5. Conclusion

In medical and psychological studies, the ART process is predominantly framed as an individual and private experience. A therapeutic language is used to describe the psychological and emotional consequences of treatment for the affected women, often assessed in terms of "depression" or "anxiety disorder." This perspective reinforces a medicalization of loss and grief within IVF treatment, with medical categories obscuring social and structural causes, namely the modes and emotional consequences of fertility treatment. Technical solutions in the form of medical-pharmaceutical interventions dominate, focusing on the pathological problem and "personal responsibility" (Browne, 2023, p. 31) of individuals (Conrad, 2007). Contrary to the assumption of a "unique emotional trajectory of each woman" (Meier et al., 2024, p. 1), our

results highlight how infertility treatment is characterized by features that amount to *typical* emotional trajectories and experiences on the journey towards a baby. These are shaped by social norms and cultural values regarding expected emotions and expressions, (female or maternal) identities, and ways of dealing with (pregnancy) loss.

At the end of the treatment, the outcome and experiences of IVF are then reflected on and communicated, as Eva points out: "If it hadn't worked out with [name of child], then you'd think, what have I done? What have I done just to have a child?" Greta likewise concludes: "It was crazy what we did." Critical judgements can frequently be found on social media, where the negative aspects of IVF are openly discussed under rubrics like "IVF survivorship" (Tsigdinos, 2022) and "IVF ruined my life" (Abdou, 2024). During periods of treatment, there is rarely time for a break or reflection; instead, all our interviewees refer to the "pressure" to act and to continue with further treatments: "You just try to function, every month" (Eva). The idea or actual situation of *not being successful* provokes deep reflection, and the influence of social norms on our behaviour and attitudes becomes most apparent when we fail to meet them. Eribon (2016, p. 45) has aptly described it: "To escape the logic of the self-evident…one must…cross the line of demarcation and move from one side to the other." Experiencing years of unsuccessful attempts seems to be such a demarcation line leading to a critical reflection on one's own desire to have children and the burden of ART treatment. After years of trying and unsuccessful inseminations, Doreen tries to weigh up the burdens of IVF to come against the possible outcome: "You take a hard look at it. Is this mine? Is this my wish? Is this my story, my life course?" She critically reflects on societal expectations—"having children is…not all [as] shiny as we paint it to be"—yet decides on trying IVF so as not to regret any missed chances. The possibility of regretting IVF treatment is not considered.

The study has some limitations. In Switzerland, access to reproductive medicine is socially selective, and the costs per treatment IVF/ICSI cycle (estimated at around CHF 10,000) are high and must be paid by patients themselves. This is reflected in the qualitative sample, as all interviewees have a university degree or higher qualifications. The CHARLS study also shows an education bias. Nonetheless, this bias also reflects the fact that access to and use of reproductive technologies are socially unequally distributed. Thus, we must assume that the experiences of more marginalized individuals, whose perspectives are underrepresented in the sample and in this article, will differ.

A limitation of our qualitative sample is the small sample size ($N = 7$). A possible bias could be that only those who were particularly affected by fertility treatment participated. However, we assume, besides the limited time and emotional resources of affected parties and especially mothers to participate in a one-hour interview, that it was rather the feeling rules and social norms—to be strong, happy, and forward-looking—that hindered others from participating. Our study focused on some typical emotions experienced and reported during and after treatment, many especially linked to pregnancy loss. However, these emotions should not be considered exclusively; others, such as empathy, or—as mothers—guilt towards others who are still undergoing fertility treatment, were also mentioned but not further followed up for this article.

Another desideratum is the partners' influence on women's emotional experiences of fertility treatment. In our interviews, while partners were implicitly included in the context of a "we" deciding to start a family, in the loss and grief narratives they either played no prominent role (Chris: "In those moments I need my mommy and not the husband") or were characterized a source of extra strain (e.g., lack of support or insensitivity) as in the case of Anna. These absences may have fostered the feelings of disenfranchisement present in our data,

leading to a specific sample, yet we believe it is more likely that they are typical for a gendered experience of fertility treatment. This is mirrored in the many research gaps regarding men and reproductive experiences (Inhorn, 2025).

Further, with one exception, all the women in the sample already had at least one child. So, it could be argued that this leads to an underestimation of the emotions of women whose treatment has yet to be successful and/or who are less willing to participate in research (Hammarberg et al., 2001). These perspectives remain unheard of and future research should focus on those.

Undergoing IVF treatment demands physical, emotional, and financial commitment. Despite their low success rates, ARTs are presented by fertility clinics and in the media and popular culture as an effective treatment for infertility and thus as offering a great chance of getting pregnant. Ambivalent experiences and feelings of reproductive failure on the part of intended parents are less recognized in medicine and science, although the most common experience of fertility treatment might be loss and failure. Our results illustrate the potential for loss through reproductive technology, creating layers of multiple loss experiences and cumulative grief, which can also be described as the "mounting emotional effect" (Bradow, 2012) of fertility treatment.

One key finding of our qualitative study was that interviewees experienced surprisingly long-lasting grieving reproductive journeys within fertility treatment. Even if their treatment was eventually "successful," that is, they gave birth to a living baby, they still remember and mourn their unseen losses and burdens. This finding complicates the common-sense assumption that medically successful fertility treatment leads to happy mothers who forget the sorrows of the treatment process.

Acknowledgments

The authors thank Brigitte Leeners for her valuable information. We would also like to thank Julene Knox for the careful proofreading and our colleagues for their feedback and support in the field and analysis phase, in particular Linda Bosshart, Lena Dreier, and Larissa Fritsch. We are also grateful to the reviewers and editors for their thoughtful comments and suggestions. Most importantly, we would like to thank the interviewees who shared their time, experiences, and personal stories with us. Your openness and honesty were essential to this study, and we hope you feel well represented in this work.

Funding

This work was supported by the University Research Priority Program (URPP) "Human Reproduction Reloaded | H2R" of the University of Zurich.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data from the Swiss Assisted Reproduction Longitudinal Study (CHARLS) will be provided upon reasonable request by the URPP "Human Reproduction Reloaded" at the University of Zurich (please contact the corresponding author). Due to confidentiality agreements and ethical considerations, the qualitative data of the LoMAR-Study will remain with the authors and are not available for further use.

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