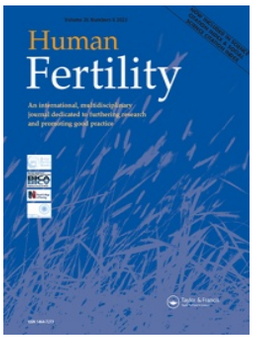

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RESEARCH ARTICLE

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Single mothers by choice in Hungary: motivations for solo motherhood and the importance of genetic ties

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ABSTRACT

This article examines the reproductive decisions and concept of kinship of single mothers by choice (SMBC) in Hungary who pursued motherhood through assisted reproductive technologies (ART). Twenty-one women in Hungary participated in interviews examining their decisions to become SMBCs, to select ART, and whether to seek information or contact with their child's genetic relatives. The findings show that genetic ties were central to reproductive decisions. All reported a strong desire to have a child; most had hoped to conceive within a relationship but, approaching the end of their reproductive years, had opted for ART. The use of donor eggs was considered as a last resort; maintaining genetic links to the child was important for their sense of motherhood. Many described their child's interest in knowing about genetic relatives. Most participants attempted to identify donor-conceived half-siblings, and several were successful. In the Hungarian context, this study highlights the increasing importance of digital technologies in challenging the legal framework of anonymity, enabling women to locate donors or their children's half-siblings. The study contributes to debates on family, kinship, and reproductive autonomy, and provides insights into how SMBCs navigate donor conception under conditions of strict donor anonymity and constrained access to ART.

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Introduction

As in many European countries, the proportion of childless individuals has been increasing in Hungary. In 2022, more than half (52%) of the Hungarian population aged 15–49 was childless, which represents an increase of 9% from the 43% recorded in 2001. Among those aged 40–49, the proportion of childless individuals increased by 11%, from 12% to 23%, between 2001 and 2022 (Szilágyi & Rövid, 2024).

The reasons for childlessness include the absence or instability of partnerships, the postponement of childbearing, health problems, other social factors, or voluntary childlessness shaped by individual considerations and broader socio-economic conditions (Miettinen et al., 2015). In Hungary, the primary reason for childlessness is the lack or instability of a partnership (Szalma & Takács, 2015).

Women who desire children but remain childless solely due to the absence of a partner may pursue alternative pathways to motherhood beyond the nuclear family model, such as assisted reproduction, adoption, or co-parenting arrangements. Across Europe, an increasing number of women are choosing to become mothers on their own (Steenberg et al., 2024; Zamora-Martínez et al., 2025), usually referred to in the literature as single mothers by choice (SMBC) or solo mothers (Golombok, 2015; Jones et al., 2022). This trend is likely to strengthen in the future, as assisted reproductive technologies (ARTs) continue to advance, and as many childless women in Hungary perceive society as more accepting of single motherhood than it was a few decades ago (Szalma, 2021).

Hungarian legislation (Decree No. 49/1997 (XII. 17) of the Ministry of Welfare; Decree No. 30/1998 (VI. 24) of the Ministry of Welfare) allows SMBCs to access up to six state-funded artificial insemination cycles

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and five *in vitro* fertilisation cycles under specific conditions. These procedures may be performed if, due to infertility or age, the woman is unlikely to conceive naturally. In cases of infertility, the condition must be confirmed by at least two independent specialist medical opinions. However, the law does not specify the age at which natural conception is considered unlikely, leaving room for individual assessment in practice. While no minimum age is set, publicly funded ART in Hungary is limited to women under 45, although procedures, or embryos, initiated before this age may continue, or be used in treatment, if there are no medical contraindications (Section 167 of Act CLIV of 1997).

For SMBCs, ART typically involves the use of donor sperm and, as many of these women are older than those in couples undergoing ART, they often require donor oocytes as well (Weissenberg & Landau, 2012). Oocyte donation is generally more strictly regulated than sperm donation, and in Hungary it is subject to stringent legal restrictions (Szalma & Takács, 2022), whereby unlike anonymous sperm donation, financial compensation for egg donation is not permitted by law. As a result, anonymous egg donation is rare in Hungary. Meanwhile, directed egg donation is allowed only from certain relatives, such as lineal or collateral relatives or a sibling's spouse (Section 171 of Act CLIV of 1997 on Health).

In Hungary, the option of using identity-reveal (identifiable) donors (both oocyte and sperm) is excluded (Navratyil, 2010), and neither the women involved nor the children conceived through such procedures have access to information about the donor's identity or background. The law stipulates that donors must give consent to provide their main physical characteristics, as well as a list and results of the laboratory tests they underwent during their medical screening. These data may be shared with recipients, whereas personal identifiers such as name and address are prohibited from disclosure (Section 171 of Act CLIV of 1997 on Health).

While in several European countries - such as Denmark, the Netherlands, and the United Kingdom - children may, upon reaching adulthood, obtain identifying or limited non-identifying information about the donor (Bolt et al., 2021; Pennings, 2025), identifying information in Hungary remain entirely sealed. This lack of information raises not only ethical dilemmas but also emotional and identity-related issues. Zadeh et al. (2017) found that among SMBC families, children thought and felt differently about their donor depending on their age and on how their mother communicated about the donor conception, highlighting the need for transparent family narratives.

In contrast to Hungary, financially compensated oocyte donation is permitted in the Czech Republic (Kocourková et al., 2023). Consequently, many Hungarian women seek ART treatment abroad, most commonly in the Czech Republic. However, Czech legislation officially does not allow SMBCs to access ART procedures (Kocourková et al., 2023), so these treatments often take place in a zone of legal ambiguity. This restriction is often circumvented in practice by requiring a male partner to formally consent to the procedure, even if he is not the genetic father (Volejníková et al., 2025). Moreover, egg donation in the Czech Republic is anonymous, meaning that neither the woman nor the resulting child has access to the donor's identity (Volejníková et al., 2025).

A similarly restrictive framework exists in Slovakia, where reproductive law limits ART primarily to heterosexual couples, effectively excluding SMBCs from procedures such as insemination with donor sperm (Čerbová, 2022). These same regulatory constraints enforce a regime of strict donor anonymity, under which only general health information is available, and the child has no right to learn the donor's identity upon reaching adulthood (Čerbová, 2022).

While adoption is another pathway to becoming a SMBC, this article focuses on single women pursuing motherhood through ART, partly in order to explore the role of genetic ties and partly due to the legislative barriers that make adoption especially difficult for single parents in Hungary where, since the 2020 legislative changes, adoption by single parents has become extremely difficult. Ministerial approval is required and single parents may adopt only when no married couple can be found in the country who wishes to adopt that child. As a result, in Hungary, ART is currently a far more accessible option than adoption. These legislative changes reflect the post-2010 Hungarian government's preference for supporting heteronormative 'traditional' families, particularly married heterosexual couples with children (Szalma & Sipos, 2024). This is evident in selective family policies as well as in symbolic measures, such as the Fundamental Law, which recognises only these couples as families, while the recognition of other family types, including single-parent families, remains open to interpretation (Herke, 2024).

Besides the conservative pronatalist policies, current societal attitudes in Hungary show a strong preference for the idea that family is grounded in genetic ties. An earlier study (Husz & Herke, 2022) reported that genetic parent–child and full sibling relationships are regarded as close family ties by almost the entire Hungarian population (97–99%), whereas non-genetic or non-fully genetic family members are less consistently recognised: stepsiblings are the least likely to be considered close family members (63%), followed by foster and step-parents (68%), foster children (76%), and half-siblings (81%).

The novelty of the present study lies in examining the experiences and reproductive decision-making of SMBCs within such a pronatalist policy environment, where 'traditional' family forms are strongly prioritised, and where genetic parenthood is strongly endorsed by the population.

The present article focuses on SMBCs who have conceived through ART. It explores the reasons why some women choose to become solo mothers, why they selected ART and what importance they attach to genetic relatedness (the desire to 'pass on their own genes') in this decision, and whether they intend to establish contact with genetic relatives such as the donor(s) and the child's half-siblings, and if so, what motivations underlie these decisions.

Previous research

Demographic profile and decision-making motivations of SMBCs

International research indicates that the majority of women who choose to become SMBCs through ART initially envisioned motherhood within a nuclear family structure, but that the dissolution or poor quality of a relationship, as well as difficulties in finding a suitable partner, often led them to decide to pursue motherhood alone, primarily due to concerns about age and the risk of exceeding their reproductive window. This decision is often regarded as a 'back-up plan' and often accompanied by feelings of ambivalence. For many, the absence of a partner remains a source of emotional dissatisfaction, although several women do not exclude the possibility of entering a relationship in the future (Birch Petersen et al., 2016; Salomon et al., 2015; Steenberg et al., 2024; Volgsten & Schmidt, 2021, 2023).

A qualitative study (Dor, 2021) has shown that, despite the difficulty of making such a major decision, SMBCs value the autonomy it affords. They appreciate being able to make child-rearing decisions independently and to avoid conflicts related to differing parenting approaches. Compared with divorced parents, they are often better able to maintain a peaceful family atmosphere. Dor's (2021) study also highlights that SMBCs perceive as an advantage their ability to devote their full attention and emotional resources to their children.

A growing body of empirical research has consistently demonstrated that most SMBCs tend to be highly educated, socioeconomically and financially stable, and strongly committed to motherhood (Jadva et al., 2009; Volgsten & Schmidt, 2021; Zamora-Martínez et al., 2025). Moreover, available evidence suggests that children raised in these family contexts do not experience systematic developmental or psychosocial disadvantages (Bergh & Wennerholm, 2020; Golombok et al., 2016, 2021; Golombok & Tasker, 2015; Lipman et al., 2002).

The challenges associated with the desire to have children while lacking a suitable partner with whom to establish a normative family structure affect men as well as women. To date, scholarly attention has focused predominantly on single mothers. A substantial body of literature has examined the experiences and family functioning of SMBCs (e.g. Golombok, 2015; Golombok et al., 2016; 2021; MacCallum & Golombok, 2004; Steenberg et al., 2024; Volgsten & Schmidt, 2021; Werner et al., 2021). In contrast, the study of single fathers by choice has emerged only relatively recently, and empirical research in this area remains limited. Only a small number of studies have specifically investigated men who pursue parenthood alone (Carone, 2022; Carone et al., 2020; 2021). Existing findings suggest that there are no significant differences between SMBCs and single fathers by choice in terms of their motivations for single parenthood, mental health outcomes, or perceived levels of social support (Jones et al., 2022). Research indicates that genetic relatedness plays a particularly salient role in men's pathways to single parenthood by choice. For this reason, single fathers by choice are more likely to pursue surrogacy rather than adoption when forming their families (Carone et al., 2017).

Issues of donor anonymity and identity disclosure

Currently, regulations differ across countries regarding whether gamete donors may remain anonymous (AD) or must be identity-registered (ID). Research on the preferences of those involved in the gamete donation process is highly relevant for policymakers.

Previous studies suggest that donor-conceived individuals, parents, and donors often express interest in one another. An increasing number of countries allow or require open-identity donation. A range of organisations and platforms facilitate contact between individuals connected through donor conception. Moreover, advances in direct-to-consumer DNA testing and genealogy services, together with the expansion of social media, mean that anonymity can no longer be guaranteed (Indekeu et al., 2021).

The review by Zamora-Martínez et al. (2025) highlights that SMBCs emphasise the importance of openness and access to information in supporting the health and wellbeing of their donor-conceived children.

According to a systematic review by Indekeu et al. (2013), parents often fear that the lack of information about the donor may affect their children's identity development, and prospective parents tend to prefer identity-release donation. Among those who choose anonymous donation, some fear that knowing the donor's identity could disrupt family harmony or diminish the child's affection for their social parents. In the case of egg donation, the choice of anonymity can be attributed to the desire to enhance the sense of security associated with the maternal role. Studies by Godman et al. (2006) and Scheib et al. (2003) reached similar conclusions, adding that even SMBCs prefer donors who reveal their identities.

Searching for relatives

Disclosing donor conception to their children presents a difficult dilemma for parents. In the past, far more people kept this a secret, but recent research shows that the number of those who inform their children about it is increasing. According to a narrative review by Duff and Goedeke (2024), a higher proportion of parents have begun disclosing this information, or plan to do so in the future, than those who keep this fact hidden.

SMBCs are more likely to acknowledge the donor's contribution, speak more openly about the donor and the circumstances of donor conception, and share this information with their children at a higher rate (Duff & Goedeke, 2024) than heterosexual two-parent families, who often downplay the donor's role in their family narrative (Burr, 2009; Indekeu et al., 2021; Kirkman, 2003; Wyverkens et al., 2017).

Children conceived through donor gametes often have biogenetic half-siblings (also known as donor siblings or diblings). In cases of embryo donation, children may even have full genetic siblings, sharing both genetic parents. Many fertility clinics and private initiatives have created online networks and social media platforms that enable families to identify others who used the same donor, and many parents both take advantage of this opportunity and express a desire to maintain ongoing contact with them (Indekeu et al., 2021).

An increasing number of long-term groups have formed among unrelated parents whose children are genetically related. These groups primarily exist online, where members can choose their level of involvement. A few families meet in person, but many select one or two families with whom they form close relationships (Hertz & Mattes, 2011).

Many families develop lasting and close relationships with donor half-siblings (Andreassen, 2017; Freeman et al., 2009; Scheib & Ruby, 2008), and in some cases, the wider family networks also become interconnected (Freeman et al., 2009; Hargreaves, 2006). Regarding the reasons why parents sought out their children's donor-related half-siblings, three overarching motivations were identified: curiosity, identity-related considerations, and the desire to establish family ties (Indekeu et al., 2021). Parents sought information about similarities among the children, viewed contact with families sharing the same donor as a factor promoting their child's identity development, and highly valued the opportunity to form extensive family bonds, including sibling-like relationships. Additional motivations included building support networks, as well as medical considerations, such as the exchange of information and the

avoidance of consanguinity. Single and lesbian mothers also tend to be more open to contacting their child's donor-conceived half-siblings, than those who live in heterosexual partnership (Indekeu et al., 2021).

These practices of seeking contact and constructing narratives around donors exist alongside a broader body of research examining whether genetic ties are necessary for healthy family functioning. Studies have shown that family ties are not necessarily based on genetic relatedness: in cases of adoption, surrogacy, or sperm, egg, or embryo donation, there is no genetic relationship between the parents and the child. Parental suitability is determined not by genetic relationship, but primarily by a strong desire for a child and the quality of upbringing (Golombok, 2015; 2018). Blake et al. (2014) examined donor conception from the child's perspective: they found no disadvantage due to the lack of a genetic relationship in the attachment of children conceived through sperm/egg donation compared with those conceived naturally. By the age of 10, most children knew and understood the circumstances of their conception and had mostly positive or neutral attitudes toward it.

Method

Between February and October 2025, a qualitative study was conducted involving twenty-one Hungarian SMBCs who became mothers through ART. Semi-structured interviews were carried out with participants recruited through social media groups, a nationwide online newspaper announcement, and via snowball sampling. Data collection and analysis proceeded iteratively and continued until thematic saturation was achieved. Saturation was defined as the point at which additional interviews no longer generated new codes or themes and the analytical categories were well developed and stable. After this point, the interviews with participants with whom appointments had already been arranged were completed, but no further participants were recruited. The interviews were conducted both online and in person, each lasting approximately 90 minutes.

The sample was intentionally heterogeneous in terms of treatment context and type of donor-assisted reproduction. We included participants who had undergone ART in different countries and had experience with sperm donation, embryo donation, and double (both egg and sperm) donation. Given the limited availability of donor oocytes and donor embryos in Hungary, care was taken to ensure that the sample included participants who had travelled abroad to access ART treatment. This heterogeneity was essential to capture a broad range of perspectives and experiences related to donor-assisted fertility treatment across different treatment pathways.

According to the predefined inclusion criteria, women were eligible if they had at least one child conceived through ART using donor gametes/embryos, with the youngest being no older than 15 years, were legally single both at the time of data collection and at the time of the child's conception, and lived alone with their child(ren) on a daily basis.

For in-person data collection, participants were provided with the consent form, which they signed and returned. For online participation, in accordance with the ethical approval, informed consent was obtained as follows: Participants first received detailed written information about the research. The consent form was then sent electronically. If feasible, participants could print, sign, and return the form by email; if this was not possible or posed a burden, verbal consent was deemed sufficient. In all cases, participants provided consent voluntarily, with full understanding of the study's purpose and procedures, and prior to participation. Given the sensitive nature of the study, several safeguards were implemented to protect confidentiality. Participants' identifying information was stored separately from research data, and pseudonyms were used in transcripts and reports. No information about participants' towns or communities was recorded. Any personal data that could potentially identify a participant was removed from interview transcripts. Data were encrypted and securely stored, and only the research team had access. Particular care was taken when reporting quotes or contextual details to ensure that participants could not be indirectly identified, particularly considering the small-country context; in all cases, no information or phrasing that could reveal participants' identities was included. To ensure anonymity, all participants are non-identifiable from the characteristics provided, and pseudonyms are used throughout the analysis.

All interviews were transcribed verbatim, and the data were analysed using an inductive, thematic approach through thematic analysis. An inductive reflexive thematic analysis was conducted following the approach of Braun and Clarke (2019). Analysis proceeded iteratively in the following steps: (1) familiarisation with the interview transcripts, (2) initial coding, (3) development of candidate themes, and (4) refinement of themes through discussion and reflection. Coding was carried out by three researchers with backgrounds in qualitative research and sociology, who regularly discussed interpretations to enhance reflexivity. Analysis was performed in the Hungarian language, and all illustrative quotes were translated for reporting purposes, with attention to preserving meaning. The translations were reviewed by all three authors. To support trustworthiness, we maintained an audit trail of coding decisions, wrote reflexive memos throughout the process, and examined deviant and negative cases.

The characteristics of the sample are presented in Table 1. The participants were aged between 35 and 53, and they became mothers between the ages of 35 and 51. Six of them conceived through double donation or embryo donation, while fifteen used sperm donation. Eleven participants underwent treatment in Hungarian clinics, six exclusively abroad, and four received treatment in both Hungary and another country. Two women currently live outside Hungary, while nineteen reside in Hungary. Most participants have one child; two have two children, and one has three. With one exception, all women in the sample are highly educated, holding tertiary degrees, and most live in financially stable conditions. Sexual orientation was not an eligibility criterion and was not formally assessed; however, all participants disclosed during the interview that they were heterosexual.

Ethical approval for this study was provided by the University of Pécs Faculty of Humanities and Social Sciences Research Ethics Committee, reference: 2/2025. (III. 14.).

Results

The reasons for becoming a SMBC

The reasons for participants in our study to become SMBCs were largely homogeneous. All reported a strong desire to have a child, yet most either had not found a suitable partner or were in relationships where their partner did not wish to have children (or where prolonged, unsuccessful attempts at conception had strained the relationship). All participants initially imagined starting a family within a partnership; conception through ART was considered only as a fallback plan. As their age increasingly became a pressing factor, they chose ART in order not to give up on their wish to become mothers. Our research indicates that many participants waited 'until the last moment' before taking this step in the hope of finding a suitable partner to start a family.

> … This marriage – well, it probably fell apart largely because no child was born into it. After that, I had a long-term partnership, during which we went through five rounds of IVF, creating every possible condition for the birth of a family – a family in the classic sense. But the failure of those five IVF attempts essentially destroyed that relationship, and at that point, I was 39 years old. Still, my desire to have a child remained as strong as ever. – Abigail (46 years old, capital city, sperm donation)

> Well, for as long as I can remember – ever since my early teenage years – I've always wanted to have a child, a family, a husband. But I never really had relationships where that feeling was mutual. – Bianca (43 years old, capital city, sperm donation)

The decision to have a child through ART did not imply that these women rejected the idea of having a partner or raising children together with a partner in the future. They saw it more as a temporary solution, driven by age-related pressures, necessitating having a child alone, rather than as a final choice. Moreover, as Laura's and Vanda's quotes below highlight, although the idealised sequence of life events involves first having a relationship and then a child, reversing this order may still allow both to occur later in life, whereas waiting for a relationship may ultimately mean foregoing motherhood altogether.

> It was a good decision. The best decision of my life. Absolutely – I'm so, so grateful for how things are. Or rather, how we are. Later, a father might come along, and then the three of us will be a family. Who knows, maybe a little sibling will come too – we'll see. – Laura (45 years old, capital city, sperm donation)

Table 1. Background characteristics of the research participants.

Name	Age	Settlement type	Type of donation	Donor anonymity	Where did she take part in the ART program?	Age at childbirth (years)	Children's age
Zoé	48	City	sperm and oocyte donation	Anonymous	HU/SK	44	4
Gabrielle	48	County town	sperm donation	Not anonymous. Danish sperm bank	HU	37	11
Laura	45	Capital city	sperm donation	Anonymous	HU	43	2
Aurora	44	Capital city	sperm donation	Anonymous	HU	41	3
Abigail	46	Capital city	sperm donation	Anonymous	HU	40	6
Anna	51	Capital city	sperm and oocyte donation	Anonymous	CZ	43	8
Barbara	42	Capital city	sperm donation	Anonymous	HU	41	1
Kyra	45	City	sperm donation	Anonymous	HU	42	3
Emma	39	City	sperm donation	Not anonymous. Danish sperm bank	HU	38	Few months
Zara	47	Capital city	embryo donation	Anonymous	HU/SK	47	7 months
Bianca	43	Capital city	sperm donation	Anonymous	HU	41	2
Olivia	50	Capital city	embryo donation	Anonymous	UK/HU/CZ	49	1
Nicole	49	Capital city	sperm and oocyte donation	Not anonymous. Specifically chose Portugal for an open-identity donor	PT	47	2
Vanda	40	City	sperm donation	Anonymous	ES/HU	38	2
Imola	41	County town	sperm donation	Not anonymous. Danish sperm bank	HU	40	1
Cynthia	53	City	sperm donation	Anonymous	SK/CZ	51	2
Nora	52	Capital city and city	sperm donation	Not anonymous. Danish sperm bank	HU	38	14
Zelina	44	Capital city	sperm donation	Anonymous	GR	35	9
Natasa	49	Capital city	embryo donation	Anonymous	ES	47	2
Viviana	43	City	sperm donation	Not anonymous	USA	41	2
Elena	43	County town	sperm donation	Anonymous	HU	43	8 months

> …I really felt that if I found the man of my dreams at 45, it wouldn't matter anymore, because it would already be too late. But if I become a single mother by 45, I might still find the man of my dreams later – it just doesn't work the other way around. – Vanda (40 years old, city, sperm donation)

While the dominant narrative among these women was that they had not found a partner and that this resulted in solo motherhood, some of them also noted that they enjoyed living their lives independently. Olivia, for instance, highlighted that she tended to enjoy making decisions and acting independently from a man. Another participant emphasised that she had always led an active life, pursuing the activities she enjoyed without being forced to make compromises within a relationship.

> The child's father does not interfere in matters that do not concern him. There are simply things that are not a man's business – that's how I see it, at least in my case. It's not by accident that I live alone. – Olivia (50 years old, capital city, embryo donation)

Although this was not a dominant narrative, these cases illustrate that some participants also valued their independence and freedom of choice, which may have ultimately contributed to their decision to have a child on their own.

The relevance of genetic relatedness - Selecting assisted reproduction

After deciding to have a child alone, the participants had to take into account the ways they could pursue this goal. Primarily, they considered ART, and some of them also considered adoption as possible pathways to motherhood. The preference for ART among the participants was shaped partly by the fact that current Hungarian legislation renders adoption an almost inaccessible pathway to single motherhood, which in itself discouraged many from considering adoption at all.

Furthermore, the decisions of many participants were shaped both by their perceptions of the difficulties involved in adopting a child and the value they placed on genetic relatedness. They emphasised that adoption is, in their view, considerably more challenging than ART, as adoptive parents often receive older children, who arrive with a formative care-giving background that must be understood and integrated into the new family context. Only a few participants also applied for adoption in parallel with their ART treatment, but they represented a clear minority. Moreover, as they explained, they primarily hoped that ART would be successful, while adoption functioned more as a secondary or back-up option, as they wished to have a genetic connection with their child. Therefore, a combination of factors related to the socialisation of adopted children and the lack of genetic connections in the case of adoption led the participants to choose ART, as illustrated by the quotes from Zelina and Abigail below.

> But I can imagine that at some point I would feel, "Why did I take on the burden of adoption?' I think I definitely have this sense of commitment to genetic ties. – Zelina (44 years old, capital city, sperm donation)

> I really wished for a child of my own … I was aware of the difficulty of raising a child who was born into another family. – Abigail (46 years old, capital city, sperm donation)

In addition, the preference of some participants for ART was not primarily because of the importance of genetic ties, but due to the desire for a biological connection. Specifically, they wished to experience pregnancy and give birth themselves, and considered genetic relatedness to be less important than this embodied connection.

Most of the participants, however, still attached strong importance to having as many genetic ties as possible after deciding to pursue ART. For them, it therefore became particularly important that conception occur using their own eggs. Many struggled to relinquish this aspiration. Several participants reported that, even against medical advice, they made at least one attempt in the hope of achieving a successful pregnancy with their own eggs.

> Well, I went there intending to use my own eggs. At the clinic abroad, they already told me that my results weren't very promising and suggested I consider a donor egg. But I said I wanted to try with my own, and I even attempted it there – but it still didn't work. – Anna (51 years old, capital city, double gamete donation)

Only one participant did not attempt conception using her own eggs, as she had experienced two miscarriages and was over the age of 45 when she embarked on treatment with ART but, as the quote below highlights, even she was unsure whether this had been the right decision.

> When I decided to go ahead alone with a sperm donor, I didn't attempt IVF with my own eggs afterward. Honestly, I don't know if that was a wise choice. I often tell others that if they want to, they should at least try once. I never did, and maybe it could have worked – but I was so afraid of having a child with a disability that I didn't want to take any chance at all. – Nicole (49 years old, capital city, double gamete donation)

The importance of genetic ties is also reflected in the numerous ART attempts undertaken by most of the participants. While some were fortunate to achieve a successful outcome on their first or second attempt, the majority underwent multiple procedures - some even as many as 8 to 10 attempts.

For women who ultimately became mothers through double-donor procedures or using donor embryos, it remained important that they were still biologically connected to their child by carrying the pregnancy and giving birth. Some mothers who used these methods emphasised that by carrying the pregnancy and nurturing the child in their own body, they felt that a form of genetic connection

develops between them and their child. This belief also shows that they try to compensate for the lack of a genetic connection in their narrative by conflating biological and genetic connection. For instance, Olivia *(50 years old, capital city, embryo donation)* noted that her child resembles her father: '*My child looks like their grandfather – an exact copy of him*.' Furthermore, some mothers also emphasised that when choosing a donor embryo, they also chose in a way to have some genetic resemblance, for instance like having the same eye or hair colour.

Some experienced anxiety, in particular about how they would communicate the fact of donor conception to their child. Meanwhile, several participants reported that it was relatively easy for them to communicate to their child that the genetic father was a donor, but much harder to explain that they are not the genetic mother.

> Well, even the egg isn't mine, so I really don't know how I'll tell them that I'm a good mother, but not really. They already understand that they don't have a dad, but I haven't started telling them that I'm not a mother in the usual sense. – Zoé (48 years old, city, double gamete donation)

These findings indicate that participants using embryo donation experienced a strong desire to establish a sense of genetic connection with their children, both in communicating their non-genetic status and in emphasising physical resemblances.

The donor

Selection of the donor(s)

Based on the interviews, the amount and type of information particpants have about the donors vary significantly, often dictated by clinic policies and national regulations. A key factor shaping the entire donor selection process is the fundamental choice between fully anonymous donors and those with 'ID-release' status, who agree to have their identity released to the child upon adulthood. Basic information typically includes a donor's physical traits, blood type, education, and health screenings. However, some individuals actively seek out far more extensive profiles from international sperm banks, which can include childhood photos, voice recordings, written messages, and detailed family medical histories, fostering a much deeper sense of connection and reassurance about the donor's health and background.

At the same time, most participants were not able to choose between anonymous or identity-registered donors. In Hungary, where the majority underwent ART procedures, the law excluded identity-registered donation, and only limited information about the donor was available. One participant, however, selected another country (Portugal) specifically to allow for identity-registered donation.

> …I specifically went to Portugal so that the child could later contact the donors. – Nicole (49 years old, capital city, double gamete donation)

Among those who expressed a preference, most referred to identity-registered donation, usually reasoning that it is beneficial for the child to have the opportunity to learn about their origins, as Nora's quote illustrates below.

> "Open donor" is now called ID release, meaning that when the child turns 18, they can meet the donor, so that at least there is some chance of knowing where one half of themselves comes from. For me, this was a huge trauma that followed me for many years after they were born. As a mother, I want the best for my child, but from the start, I took on this responsibility knowing there was such a huge gap. This thought process generates a lot of guilt – yes, this guilt and sense of responsibility. – Nora (52 years old, capital city/city, sperm donation)

The process of choosing a donor also reveals distinct patterns, particularly when comparing sperm and egg donation. For many, initial selection is guided by practical medical criteria, such as matching blood types to prevent RH incompatibility. A prominent theme, especially when selecting sperm donors, is the desire to find a donor who feels personally likeable or relatable, with some participants describing an almost instantaneous emotional connection upon seeing a childhood photo or reading about their hobbies. This contrasts with the selection of egg donors, which more frequently appears driven by strategic genetic matching to the intended mother or her family lineage, such as ensuring the donor shares specific traits like blue eyes, rather than forming a holistic, personality-based connection.

Several participants also expressed dissatisfaction with the limited amount of information available about donors. In response, some reported attempting to identify the donor through other sperm banks in order to obtain additional information prior to making their selection.

> The form contains very little information—basically just height, eye color, hair colour, blood type, and what diseases the donors have been screened for… and then they put 20–30 of them in front of you to choose from. But the foreign samples are sourced from the Danish central bank, which, however, has a very good website… and from there you can filter by the parameters listed on the Hungarian data sheet, and then a wealth of information is revealed to you. …I have a friend who was really confused by this donor selection process for exactly this reason, because with just three pieces of information, they can't decide when there are 20 data sheets, and they can't associate any image or feeling with them. – Bianca (43 years old, capital city, sperm donation)

There was only one participant (Aurora) who deliberately tried to maintain a strong distance from the donor before choosing.

> No, I didn't want any attachment. Even if I saw just one picture of the donor, I would have started searching for the father in my little girl, to see if she resembled him. – Aurora (44 years old, capital city, sperm donation)

SMBCs' attitude towards the donor(s), and efforts to find the anonymous donor(s)

The fact that their child was born with the help of a donor did not cause any difficulties for many of the participants, as Emma's quote illustrates below. Some mentioned that they were proud of having had a child on their own and considered their decision to be 'cool'. However, doubts and fears about donor conception also appeared in the responses. Some reported fears that their children might resent them later as, for instance, Zoé elaborates below, or that the child might suffer discrimination or face difficulties because of this.

> The fact that he doesn't have a father is something that is now a reality. So, it can't be changed, he will know where he comes from, he will see a couple of childhood photos of his father, who is a real person living in Denmark, so he will know, but there won't be any personal contact. I am absolutely convinced that he will have no difficulty with this, because I am so relaxed about it, and that is what I am passing on to him. – Emma (39 years old, city, sperm donation)

> I don't want him to resent me for how he came to be. The donor is anonymous. He will never know his father, unless it's through these gene banks now. – Zoé (48 years old, city, double gamete donation).

Most participants expressed a neutral attitude toward the donor, and some expressed gratitude for making the birth of their child possible. Among those whose sperm donor came from a foreign culture, several emphasised that they wanted to introduce their child to the genetic father's cultural background.

> The donor, the donors – so for me it's a wonder that men in Denmark are like this, and that so many men donate. And purely because they want to help, not for financial reasons. So let < my daughter > be proud of this journey. – Imola (41 years old, city, sperm donation)

> All I know is that he is Portuguese, and I will really try to show everything related to this culture to my child. I want her to know everything I know about her father. – Bianca (43 years old, capital city, sperm donation)

None of the participants' children are yet 18 years old, so the issue of locating ID-released donors has not yet arisen.

Only a few participants are aware that even an anonymous donor could potentially be identified through DNA testing. Some participants expressed reservations about attempting to identify a donor who had originally donated under conditions of anonymity. Some indicated that they would leave this decision to their child in the future and did not intend to actively search for the donor themselves, for example through DNA testing.

> For instance, Nicole highlighted the potential risks of the misuse of genetic data during the search process, while Laura emphasised that she finds it unethical to search for a donor who agreed to donate only under conditions of full anonymity. She further stressed that she does not intend to interfere in the donor's life or that of his family, nor does she wish to cause him any difficulties. One participant noted that although she is aware of this possibility, she has not given it much thought yet, as she feels she would not really know what

> to do with the information. '*And I feel that genetic testing is very risky. You can't change your genetic data, so I don't feel it's safe to share it, because if someone misuses it, there's nothing you can do*' – Nicole (49 years old, capital city, double gamete donation)

> I think that since her father wanted to be an anonymous donor, I allow him to remain anonymous, because that was his wish. Of course, when my child grows up and turns 18, technology and DNA will probably make it possible for her to find out who her father is within a minute. But that should be her decision. – Laura (45 years old, capital city, sperm donation)

One participant reported that, through a DNA testing website and additional searches on Facebook, she was able to identify the donor's relatives and most likely the donor himself. However, she did not act on this information and left open the possibility that the donor or his relatives might contact them in the future. She also emphasised that, in her view, full anonymity will likely not be possible in the future.

> I had a genetic test done for her, and relatives came up immediately. Yes, and I've already narrowed down who the father could be. So, on Facebook, you can filter things very carefully – it takes a few hours, but you can really sort through everything. So basically, I already know who the father is. – Imola (41 years old, city, sperm donation)

Searching for half-siblings

Compared to identifying the donor, there was greater agreement among the participants that finding their child's donor-conceived half-siblings would be beneficial. They considered this important from the perspective of their children, as discovering half-siblings would allow them to connect with genetic relatives and form meaningful bonds with them. Most of the participants attempted to search for their child's donor-conceived half-siblings, and several were successful.

For some, finding a half-sibling did not lead to significant changes in their lives. In most cases, the half-siblings found by the participants lived in another country, or even on another continent, so few had the opportunity for in-person meetings. However, even in these cases, some contact did develop between the parents and half-sibling children, as they kept in touch via the internet. One mother reported, for instance, that the children wished each other happy birthday and exchanged pictures, maintaining a loose but friendly connection. She also mentioned that she enjoyed observing the resemblance between the children.

Furthermore, there was one participant who had already met multiple half-siblings living in Europe. She found a half-sibling whose parents had already searched for their shared siblings, which allowed her to establish contact with five half-sibling families immediately. While her initial motivation was to help her child connect with relatives, she reported that the major turning point in this process was more related to her own emotional experiences than to maintaining contact with the siblings. The shame she had felt for choosing to raise a child alone dissipated once she discovered her child's half-siblings, as the following quote highlights:

> For a long time, I carried a mixture of guilt and shame, and I worked on it a lot – therapy, coaching, all sorts of groups, you name it – and nothing helped. Then, thanks to Facebook groups, I found my children's siblings, and suddenly it was gone. – Nora (52 years old, capital city/city, sperm donation)

More challenging cases connected to finding the half-siblings also occur in the participant sample. One participant accidentally discovered her child's full genetic siblings, since she became a mother via embryo donation, and she found another mother who had received a donated embryo from the same couple. Her motivation was not at all related to finding siblings; she was simply seeking connection with other SMBCs through a social media group. While chatting with one of the mothers, they gradually realised that many details in their experiences were the same, and eventually discovered that they had most likely received embryos from the same couple.

There were also participants who would have been open to maintaining contact with their child's half-siblings' families, but the other party was not willing. Moreover, some participants were unaware that this possibility existed, while others faced ethical dilemmas about whether to pursue the search. As

Gabrielle's quote below highlights, some mothers were thinking about what to do, both from their own perspective and from the perspective of whether it would be good for their children.

> To my great surprise, I learned through a Facebook group that it is now even possible to search for siblings. This has been quite a dilemma for me. For the past one or two years since I became aware of this, I have been grappling with it internally, and I haven't really talked to my children about it. – Gabrielle (48 years old, city, sperm donation)

One participant also expressed concern about providing genetic data to locate relatives, viewing it as an unsafe option because the data could be misused. Others shared the view that they prefer to wait until their children turn 18, allowing the children to make this decision as adults.

Conclusion and discussion

Drawing on twenty-one interviews with women in Hungary who became mothers through ART, this study examined several interrelated aspects of single motherhood by choice. First, why women decide to become solo mothers was explored. Consistent with international research (Birch Petersen et al., 2016; Salomon et al., 2015; Steenberg et al., 2024; Volgsten & Schmidt, 2021, 2023), although all participants expressed a strong desire to have a child, most had either not found a suitable partner or were in relationships in which their partner did not wish to have children. Most participants had originally intended to have children within a partnership and through natural conception; however, due to time constraints, they chose to pursue motherhood independently.

Second, why women turned to ART and how they evaluated different reproductive options was examined. Many participants preferred to use their own eggs and pursue treatments that allowed them to maintain a genetic connection to the child before considering other alternatives. Third, the importance participants attached to genetic relatedness in their decision-making was considered, including the desire to pass on their own genes and the role this played in their understanding of motherhood. Genetic relatedness was an important consideration for most participants, particularly in their preference for using their own oocytes whenever possible. Finally, the question of whether participants intended to establish contact with genetic relatives, such as donors or potential half-siblings, and what motivations might shape such decisions was examined. Participants showed mixed attitudes toward contacting genetic relatives. Attempts to locate the anonymous donor were mostly rejected, whereas efforts to identify half-siblings were more commonly pursued.

The findings suggest that among Hungarian participants there is a growing demand among women who choose to raise a child alone for greater knowledge about the donor and for the possibility that their children may contact the donor later in life. This is similar to patterns observed in international studies (Indekeu et al., 2013, 2021; Zamora-Martínez et al., 2025). At the same time, the legal regulations concerning donor and half-sibling identification, the increasing availability of genetic testing, and the opportunities offered by social media are not always fully aligned.

Several participants reported that, when selecting a donor embryo, they expressed a preference for a degree of genetic resemblance. This finding is consistent with other studies (Becker et al., 2005; Indekeu, 2015), which indicate that perceived resemblance in donor-conceived families extends beyond a mechanism for social validation, contributing actively to the formation of emotional bonds and the construction of kinship. Some participants suggested that even when using a donor embryo, carrying and giving birth to the child could create a perceived sense of resemblance or embodied connection, reflecting the deep emotional importance they attached to pregnancy and motherhood.

The importance of genetic ties was also reflected in some participants' interest in obtaining information about the donor and, in some cases, about potential donor siblings. Several mothers felt that having at least some information about the donor could be important from the child's perspective, as they did not want their children to feel deprived of knowledge about their origins. The importance attributed to donor-related information in our study also aligns with previous research showing that SMBCs often adopt more open narratives about donor conception and may place greater emphasis on their children's access to information about genetic origins than those who live in a heterosexual partnership (Duff & Goedeke, 2024; Indekeu et al., 2021; Zadeh et al., 2017).

At the same time, previous research has shown that family relationships and parent–child bonds in donor-conceived families are not negatively affected by the absence of a genetic connection (Blake et al., 2014; Golombok, 2015; 2018). However, the emphasis placed on genetic relatedness in participants' narratives should not be interpreted as a purely 'natural' preference. Previous research has also shown that the meaning attributed to genetic ties in donor-conceived families is shaped by broader social and cultural norms surrounding reproduction and family formation (Freeman et al., 2009; McLaughlin, 2015; Volgsten & Schmidt, 2021, 2023; Zadeh et al., 2017). This may be particularly salient in pronatalist contexts such as Hungary, where genetic relatedness and biological parenthood are strongly embedded in cultural and political narratives, and ARTs are actively supported and regulated by the state (Szalma & Pélyi, 2025).

This study offers a novel contribution by examining the experiences of SMBCs in the Hungarian context, where donor conception is shaped by specific legal and institutional conditions. The findings highlight how participants reflect on genetic relatedness when considering family formation and their children's future questions about origins. At the same time, these narratives illustrate how contemporary technological and social developments may challenge the practical maintenance of donor anonymity.

Such ethical issues extend beyond the donor to their siblings and other relatives, many of whom may be completely unaware of the circumstances, creating complex moral and social challenges. These ethical challenges could be mitigated by providing comprehensive information at the outset, yet Hungarian clinics currently offer very limited details about donors (Navratyil, 2010). This lack of transparency forces recipients to seek alternative means to learn about the genetic parents, highlighting the importance of clearer guidance and greater transparency in clinical information provided to recipients. This situation is further complicated by the fact that egg donation opportunities are highly restricted in Hungary (Szalma & Takács, 2022), which leads many women to seek ART treatment using donor eggs abroad.

Our research contributes to the existing literature in several ways. First, it provides empirical insights into the experiences of SMBCs in the Hungarian context, where donor conception is shaped by specific legal and institutional conditions and strict donor anonymity. Second, the study highlights the central role that genetic relatedness continues to play in women's reproductive decision-making, even in contexts where ART and donor conception are involved. Third, the findings show how contemporary technological and social developments, such as genetic testing and online networks, may challenge the practicality of maintaining donor anonymity and reshape emerging kinship practices. These insights contribute to broader discussions about assisted reproduction, family formation, and reproductive autonomy in contemporary societies.

Limitations

Participants were recruited via social media groups, an online newspaper announcement, and snowball sampling. This recruitment strategy likely shaped the findings, as it may have preferentially included women who were already connected to online communities and comfortable discussing donor conception publicly or privately. In addition, the sample was relatively small ($n = 21$) and consisted largely of women with relatively high levels of education and financial stability, which may limit the diversity of experiences captured in the study. In addition, the sample consisted exclusively of heterosexual women; therefore, the study cannot provide insights into the experiences of lesbian SMBCs. Therefore, the findings should be interpreted as providing qualitative insights into a particular group of SMBCs rather than as representative of all SMBCs in Hungary.

Author contributions

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Data availability statement

The participants of this study did not give written consent for their data to be shared publicly. The sensitive nature of the research and the heightened risk of participant identification in the small-country context also justify that the data are not publicly available.

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