



## REVIEW

# A SWOT analysis of unregulated sperm donation

**BIOGRAPHY**

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**KEY MESSAGE**

Online sperm donation has a bad reputation due, in part, to the possibility of abuse. This structured analysis reveals strengths, including demedicalization and an increase in women's reproductive autonomy.

**ABSTRACT**

In the past decade, an unregulated system of sperm donation has developed in parallel with the formal system of fertility clinics and sperm banks. In the present paper, a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) is presented of this new development. The most important strength of the informal system is the demedicalization of sperm donation and thus the increase of women's reproductive autonomy. The main weakness seems to be the possibility of abuse and morally questionable behaviour on the part of donors. Most other reported disadvantages are based on a comparison with the formal system. A closer look, however, reveals that most of these disadvantages (no ability to limit the number of offspring per donor, no genetic testing or verification of information) also exist in the formal system. The informal system has a bright future, as regulators tend to impose ever more restrictions on institutional sperm banks, thus increasing the medicalization and costs for the users. Relaxation of quality and safety measures, flexibility in rules regarding the relationship between donor and recipient, and cost reduction in the formal system would be the main threats to unregulated sperm donation.

**KEYWORDS**

Connection website  
Internet  
Online  
Sperm bank  
Sperm donation  
Unregulated

## INTRODUCTION

Unregulated sperm donation covers a wide variety of channels, including connection websites (sites in which donors and recipients register and can meet), Facebook and social media groups, and personal advertisements on different platforms. The connection websites and social media groups are different in scale, organisational structure, rules and target audiences. The participants also have many different reasons and motives for joining this route, ranging from looking for a co-parent to a one-off meeting to obtain gametes. Women are increasingly turning to these unregulated settings to find a sperm donor. This trend can not only be seen in the Western world but also in countries like Russia and Japan (Polyakova, 2021; Nakata et al., 2021). At present, it is difficult to measure the magnitude of this evolution. Researchers are largely relying on the number of registrations provided by the connection websites themselves and on the number of members of Facebook groups. Sperm Donation USA had 15,200 members on March 2021 (Gibb, 2021). Pride Angel had 27,650 members in 2017, among which approximately 17,000 registered as sperm recipients and slightly more than 5000 as sperm donors (Jadva et al., 2017). Taylor et al. (2022) estimated the number of potential recipients based on 60 English language websites and social media pages at 350,000. Being registered, however, does not mean that one is active or that connections are actually made in real life (Whyte et al., 2018). Of 400 online sperm donors who completed a questionnaire, only 70 had at least one child conceived through their donation (self-reported) (Graham et al., 2019).

The research of this trend has, to a large extent, focused on the question of why people used this way of creating their family rather than going to a sperm bank or fertility clinic. To be attractive, the unregulated system must have several advantages that outweigh the perceived disadvantages for the participants. Men donating informally, for instance, do not enjoy legal protection. However, they have greater control over the process, can negotiate terms and conditions of the donation, can decide who to donate to, what information to share and whether to have contact with the offspring (Bossema et al., 2014; Woestenburg et al., 2015;

Freeman et al., 2016; Lavoie et al., 2018). Recipients in the unregulated system also encounter practical, safety and legal hurdles. Their main reasons to choose this route were that they had the opportunity to meet the donor and to gather more information about him (Jadva et al., 2018).

Two general underlying ideas are worth mentioning when considering the research on unregulated sperm donation. First, many commentators start from the assumption that the same rules should apply in the formal and informal circuit. One could, however, also take natural reproduction as the reference point. If one compares unregulated donation with natural conception, many of the same threats can be found, i.e. no genetic screening, no guarantee of sperm quality or abuse on dating sites. Those dangers do not lead to the conclusion that people who intend to reproduce naturally should be discouraged from doing so. Second, at present, relatively few studies have been conducted on unregulated sperm donation. The debate seems to rely mainly on anecdotal evidence, newspaper articles and blogs. These sources have their obvious weaknesses: lack of reliable information, unverified rumours, and selection made on the spectacular nature of the message. The other sources of information are parties that have a mandate established by law to impose certain rules. Emphasizing the negative side of the evolution presumably encourages citizens to follow those rules. These sources include regulators (organizations such as HFEA, Health Canada and VARTA) who consider this as a form of law evasion, whereas sperm banks and fertility clinics see this evolution as competition. At this stage, a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis based on scientific studies may help to obtain a more accurate picture of the situation.

## STRENGTHS

The main strength of the system is that it increases the reproductive autonomy of women in countries in which access to donor spermatozoa is restricted, where rules are imposed that curtail the freedom to build one's family according to one's own values, or both. All through history, society has imposed measures to control female reproduction (Lombardo, 2015). Sperm

donation is not a medical treatment. The history of sperm donation shows that its medicalization gave governments control over women's access to spermatozoa. The intermediaries are supposed to screen applicants to make sure they are suitable according to state values (Barney, 2005; Holme, 2021). The wish for government control via the healthcare system is illustrated by the 2014 version of the Danish law (Vævsloven § 9a) that abolished direct-to-consumer sperm shipping: 'Human tissues and cells may only be distributed or exported to approved tissue establishments, fertility clinics, hospital wards or authorized healthcare professionals'. The increase of reproductive autonomy is most obvious when people who are denied access to donor sperm, i.e. lesbian couples and single women, can obtain the intervention or material they need (Barney, 2005; Stambolis-Ruhstorfer, 2020). A recent overview of the legislation in 43 European countries revealed that 18 countries provide fertility treatment for female couples and 30 for single women (Calhaz-Jorge et al., 2020). Access to fertility treatment is also denied to these groups in large countries such as China and Japan. Unregulated systems bypass the medical professional as a gatekeeper. Even when countries give very broad access, women can only exercise their right with the approval of a medic of some form (fertility specialist, general practitioner or sperm bank employee) (Abbasi, 2013; Lombardo, 2015). Moreover, there is strong evidence of indirect discrimination of some groups through funding rules even when they are given legal access (Taylor et al., 2022).

The reasons and motives of people who enter the informal system largely overlap with the reasons and motives of people moving across borders for fertility care (Ravelingien et al., 2016). Some recipients and some donors reject specific rules imposed by law or regulation and look for an alternative way to create their family. Many countries do not allow the recipient to select the donor, and vice versa. Other recipients do not want donor identifiability or, on the contrary, donor anonymity (Jadva et al., 2018). The unregulated system allows people to bypass or modify all rules and restrictions of the formal system.

Another major strength is that the internet is hard to control. Unless

governments take drastic measures, such as shutting down websites and social media, the unregulated system will defy most restrictions. Nevertheless, governments have taken repressive steps to try to stop unregulated donation. The Food and Drug Administration in the USA, for instance, has tried to regulate all private sperm donations and even threatened some donors with imprisonment and fines if they did not stop providing spermatozoa (*St. Charles, 2013*). The HFEA also started a case against a website (Men Not Included) that specifically intended to enable contact between would-be donors and lesbian couples (*Barney, 2005*). When the websites restrict themselves to facilitating contact between people looking for a match, they are not doing anything illegal.

Several investigators have warned against the creation of a black market in donor sperm (*Holme, 2017; Sinha, 2021*). Little empirical evidence, however, is available for a commercial motivation in unregulated sperm donors. The studies indicate that unregulated sperm donors, like formal sperm donors, expressed a variety of reasons to donate. Frequently, there is a mix of altruistic and self-directed motives, i.e. money, procreation, pride (*Riggs and Russell, 2011; Freeman et al., 2016*). Moreover, when donors in sperm banks are compared with unregulated donors, regulated donors rated financial payment as more important than unregulated donors (*Graham et al., 2019*). This may be explained by the fact that donors in unregulated settings may obtain other immaterial rewards, such as the ability to select the recipient, direct contact and a feeling of control (*Bergen and Delacroix, 2019*). People who value altruistic donation should prefer unregulated donors.

Three other advantages are worth mentioning: unregulated sperm is much cheaper, the waiting lists are shorter and the choice of donors is larger. Recipients indicated that the high cost of donor sperm in clinics and sperm banks is a prime motive for looking elsewhere (*Jadva et al., 2018*). When no funding for donor insemination is offered to recipients, the costs of donor insemination may be high, especially as the success rate per insemination is below 15% (*Kupka et al., 2016; Taylor et al., 2022*). As a consequence of the shortage of sperm donors in most

countries (apart from Denmark), there are fewer donors to choose from (if recipients are allowed to do so) or to match. The limited donor pool may lead to more rudimentary matching, longer waiting times, or both. France recruited approximately 500 donors in 2019 (*Agence de la Biomédecine, 2020*). The UK recruited approximately 400 donors in 2016 (*Human Fertilisation and Embryology Authority 2018*). The numbers of candidate sperm donors online dwarfs these numbers. As mentioned above, Pride Angel had 5299 registered sperm donors in 2016 (*Freeman et al., 2016*). It is not known how many of them actually donated but, in principle, they are available.

## WEAKNESSES

### Safety

An important weakness emphasized by many commentators, clinics and sperm banks is the lack of sexually transmitted disease testing and genetic screening. Unregulated donation is claimed to be unsafe for recipients (*Harper et al., 2017; Lavoie et al., 2017*). Several unregulated donors, however, have regular check-ups and could document that they had no sexually transmitted diseases (*Lavoie et al., 2017*). In one study, 87% of the informal sperm donors had undergone medical screening (*Freeman et al., 2016*). It is not known, however, whether this percentage is representative for all unregulated sperm donors. While the use of spermatozoa from a sperm bank guarantees the absence of sexually transmitted diseases, the same cannot be said for genetic diseases. There is huge variation in genetic testing in sperm banks and clinics around the world. In most sperm banks, genetic screening is performed by taking a three-generation family history. Most European banks and centres only carry out genetic testing for the most prevalent diseases and diseases connected to the donor's ethnicity as prescribed by the European Directive on Tissues and Cells (*European Parliament, 2004*).

Recipients of informal sperm donation must trust the donor in this regard. Anecdotal evidence shows that some donors do not stop donating when informed about increased genetic risks. In the Netherlands, an unregulated sperm donor with a diagnosis of Asperger syndrome withheld this information from the recipients (*Rechtbank Amsterdam,*

*2018*). Also in the UK, an unregulated donor who carried fragile X did not inform the recipients and the judge decided to make his name public to prevent him from donating to other recipients (*Family Court Derby, 2022*). Some men donating in formal sperm banks, however, also lie about their medical history. Regularly the media have reported cases of sperm donors who transmitted a genetic disease to their offspring (*Mroz, 2012*). The discovery of a sperm donor with neurofibromatosis type 1 who could have passed it on to 43 offspring caused a huge debate in Denmark and led to a reduction in the number of offspring per donor (*Waterfield, 2012*). At present, there is no reason to assume that informal donors are more malicious than formal donors. Moreover, in formal sperm banks and clinics, the medical information about his family provided by the donor is not checked either (*Rosas, 2008, Tamir, 2013*). This should, by the way, not be seen as a failure of the sperm banks, as checking the medical records of family members of the donor would be a massive violation of these persons' privacy. A minimal level of trust is unavoidable.

### Welfare of donor children

It could be argued that regulatory systems protect donor-conceived children's rights (*Gamble, 2018*). If donor and recipient make arrangements in which the donor will be anonymous, the child will have no regulated access to its genetic origins. However, this is not the case either in regulated systems that impose donor anonymity. The variety in legislation in different countries regarding this point demonstrates a lack of consensus on which rights there are and what these rights imply (*Calhaz-Jorge et al., 2020*). Also, in countries that have abolished donor anonymity from the age of 16 or 18 years, parents are not obligated to inform their children about the donor conception. In addition, a literature review on disclosure showed that no measurable, stable differences in psychological wellbeing were found between donor offspring who had been told and those who had not been told (*Pennings, 2017*). Also, regarding donor anonymity, there is no scientific evidence that an identifiable donor benefits the children. A longitudinal study among donor offspring of lesbian couples up to the age of 18 years has shown that the type of donor (anonymous, identifiable or

known) had no effect on the wellbeing of the donor offspring (*Carone et al., 2021*).

### Number of offspring per donor

There are no limits on the number of children a man can have via connection websites. Donors with hundreds of children regularly make the headlines in popular news media. Although newspapers love these stories, the number of prolific informal sperm donors is likely to be small. Many countries have limits for their sperm banks in law and regulation. However, there is a huge variety among countries (*Janssens et al., 2015*). It ranges from 6 women in Belgium, over 25 children in the Netherlands to 25 per 800,000 inhabitants in the USA. The number is decided on the basis of different criteria: risk of consanguinity, average size of families achieved by natural conception, perception of the donor and potential complexity of managing new relationships for donor offspring (*Janssens et al., 2015*).

Questions can be raised about the legal limits within the formal system. Countries with a limit frequently have no adequate means of verifying whether the limit is respected because they lack a central donor registration. Donors can donate in several clinics in the same country and lie about it when asked. Moreover, many countries import spermatozoa from Denmark and the large sperm banks there follow the national quotas within each country. Consequently, a formal donor may globally have an equally large number of offspring as an informal donor. In addition, even a central register cannot prevent extra donations outside the formal system. Research shows that about 30% of informal donors also donate formally (*Whyte, 2018*). Nevertheless, a study in the UK among formal donors showed only 2.4% also donated informally (*Graham et al., 2019*). Finally, sperm banks and clinics rely on the feedback from the recipients about the births and not everyone reports the pregnancy and birth.

A final point is that also in formal systems, things may go wrong. The number of cases in which DNA testing revealed that fertility doctors have used their own spermatozoa for decades to impregnate their patients is increasing steadily, and some of these doctors have created large numbers of offspring (*Madeira et al., 2019; Amani, 2021*). Although the current organization of

sperm banks in many countries makes it highly unlikely that such practices could happen now, it at least shows that, without adequate control, fraud may also occur in the formal system.

### Abuse

Slightly less than one-half (44%) of unregulated donors wanted to donate through 'natural insemination', meaning sexual intercourse (*Freeman et al., 2016*). Many authors of newspaper and magazine articles and blogs consider this as highly inappropriate. This wish taints the person wishing to donate by questioning his motives. He becomes a sexual predator rather than a helping man. The underlying message is that wanting and proposing sex is wrong. Moreover, it is also wrong for recipients to accept sex as a means of conception. The HFEA explicitly states to 'Never agree to natural insemination, i.e. sex', but no explanation is offered for this recommendation. There seems to be a connection with the moral rejection of one-night stands and casual sex (*Holme, 2021*). The method of conception, however, like contact arrangements, logistics and location, is a matter of negotiation (*Lavoie et al., 2017*). About one-half of the recipients had discussed the method of conception with the donor (*Jadva et al., 2018*). A candidate donor who agreed to artificial insemination but then insists on sex breaks the agreement and a recipient who finds this unacceptable should cancel the deal. In reality, things may not be that simple (*McQuoid, 2015*).

There are real concerns about abuse. *McQuoid (2015)* in a non-peer reviewed report found that about one-half of women experienced some form of abuse or violence from unregulated donors. There is a continuum in intimate violence going from intimidation, threats, stalking, sexual harassment to coercion and rape. In this respect, the situation is not different from online dating. Dating violence is relatively common (*Gillett, 2018*). The precautions recommended on dating sites to prevent such abuse, i.e. meet the person first in a public space, tell others about the meeting, equally apply to the encounters on connection websites for reproduction. In a large survey among recipients of unregulated donor spermatozoa, 11% reported a negative experience after contact with their donor (*Jadva et al., 2018*). Although the extent of the problem is unclear,

it seems that instances of abuse are real (*Anonymous, 2022*). Although all instances of sexual violence should be strongly condemned, they cannot justify closing down connection websites. But they are a serious reason for caution.

A Victorian (Australia) commission proposed the establishment of a state-wide service to facilitate connections between would-be donors and recipients (*Gorton, 2019*). It is not clear what exactly they had in mind, but it looks as if it would be a moderated site in which people have to register (and presumably their identity is checked), and where interactions between people are monitored to avoid that they propose undesirable actions, such as sexual intercourse or ask for money. It is doubtful that a government-supervised website would be attractive or acceptable to people currently visiting connection websites. Some non-governmental sites already require men to document their identity and health status (*Holme, 2021*). Some sites (such as PollenTree and Pride Angel) also ask recipients to report registered users who break the rules of the site.

### Reliable information

Studies show that up to 80% of the participants on dating sites lie about some part of their profile (*Manta, 2019*). There is no obvious reason to believe that the situation would be different on connection websites. Extended donor profiles look almost identical to dating profiles, but with the addition of medical information (*Bokek-Cohen, 2016*). The possibility of a face-to-face encounter in the future may reign in the freedom of donors to present themselves in a deceptive way (*Bokek-Cohen, 2015*). In clinics, direct contact with the personnel may have a similar effect, at least as far as self-description of phenotype is concerned. The personnel, however, do not know all the points that a donor puts in an extended profile (*Bokek-Cohen, 2015*). Donor profiles, however, are not verified in official sperm banks and clinics. The information provided by the donor is not, or is only to a very limited extent, checked by the bank. A few famous cases made the headlines where donors lied about almost everything (health, genetics, occupation, skills, traits, background, education, interests, athletic ability and physical appearance) (*Posada, 2018*). Recipients have sued sperm banks in the USA and Canada for not verifying

medical and other information provided by a sperm donor (*United States Court of Appeals, 2019; Superior Court of Justice, Ontario, 2021*). The information in the formal system provided by the donor (including medical information and family history) is taken at face value. In both systems, the donors (and the sperm banks in the formal system) benefit from presenting themselves in a way that makes them attractive to potential recipients. The additional requirement for sperm banks to verify the information provided by donors would again increase the cost for the recipients and will deter several potential donors.

### Legal vulnerability

One of the largest concerns in informal donation is the lack of legal protection of both donors and recipients (*Harper et al., 2017*). In most countries that allow sperm donation, the donor is legally protected against all claims by recipients and offspring related to paternity and child support payment when he donates through a licenced clinic. Simultaneously, recipients are protected against a donor who would want to become a legal parent, have access to the child and visitation rights. The legal situation, however, is not clear in all countries. Especially in countries in which same-sex relationships are not legally recognized, known donors may have a chance (or risk) of being recognized by court as the legal father of the child even when the donation took place through a clinic or physician (*Forman, 2016*).

One way to lower the risk of unexpected legal consequences is to promote 'contracts' or written documents. Some connection websites provide templates of such contracts, sometimes with legal advice (*Lavoie et al., 2017*). In one study, 53% of the actual donors had drawn up a legal agreement and 21% had undergone counselling (*Freeman et al., 2016*). Although designing such a document forces the participants to think about the arrangement and may serve as proof of the intentions of all parties at the time of donation, these documents are in many countries not legally binding. In cases of conflict, for instance, when a donor tries to obtain custody of the child or the recipient seeks recognition of paternity of the donor with the financial responsibilities, the legal status of such a document will very much depend on the jurisdiction. The legal situation in general becomes even more complicated

when the child was conceived through sexual intercourse and when the donor is known and has regular contact with the child (*Acker, 2013; Cahill, 2016*). One major barrier for participants to sign a contract or pre-donation agreement is that it requires both donor and recipients to identify themselves and many do not want that. Consequently, some participants prefer a verbal agreement based on mutual trust (*Lavoie et al., 2017*). Although most donors and recipients seem to be aware of this lack of legal protection, this risk does not seem to be a strong deterrent (*Graham et al., 2019*).

### OPPORTUNITIES

Interesting opportunities and growth options may present themselves owing to the continuing trend to strengthen restrictions in official sperm banks. Many recipients and regulators seem to start from the premise that sperm banks should guarantee zero risk. One of the prime examples of this belief is the introduction of mandatory expanded carrier screening (ECS) for donors (*Payne et al., 2021*). The gain in risk reduction of ECS is minimal (below 1%) (*Pennings, 2020*). The disadvantages, however, are considerable: some donors will refuse to be tested and drop out, others will be excluded because of a (small or uncertain) genetic risk, and genetic testing will further increase costs. Not only will the recipients have to pay for the screening of the donors, but they will also have to undergo ECS. Testing the donor but not the recipient is useless when screening for recessive disorders. Moreover, some recipients will object to genetic screening and will move to the less medicalized informal circuit. In the same vein, official sperm banks are increasingly advertising their high quality by lowering the maximal age limit for sperm donors. They argue that the success rate will be higher and the genetic risk for the offspring will be lower. Although there is a small improvement on both parameters, the direct effect is that fewer men are eligible for donation. This measure may be especially important for countries that abolished donor anonymity as it was claimed that this change would attract more older men with children (*Daniels, 2007; Van den Broeck et al., 2013*). One study showed that the informal circuit to a large extent thrives on men of advanced age (one-third of unregulated

donors were over the age of 40 years) (*Freeman et al., 2016*). Interestingly, in a study comparing sperm bank donors and unregulated donors, the unregulated donors were older and more likely to have children than the sperm bank donors (*Graham et al., 2019*).

Another evolution that ensures an increase in potential consumers is the steady increase of single women and lesbian couples presenting themselves for sperm donation. The benefit is, however, uncertain as these women are generally older and their chances of becoming pregnant through self-insemination are fairly low. When these women present themselves at fertility clinics, however, they will frequently be offered IVF and intracytoplasmic sperm injection because of their lower chance of success, which further increases the costs and medicalizes the intervention (*Dempsey et al., 2022*).

### THREATS

Relaxing certain restrictions in formal clinics and sperm banks would decrease the use of unregulated sperm donation. Two types of restrictions come to mind: those that limit access of certain groups of women to the regulated system and those that prevent arrangements that are considered important by several users. As mentioned above, large groups, such as single women and lesbian couples, still have no, or limited, access to infertility treatment in many countries. It can be argued that restrictive policies and practices for formal donor insemination are forcing women to go online (*Taylor et al., 2022*). More European countries are allowing single women and lesbian couples to access fertility treatment. France is the most recent example of this trend. At the same time, France also abolished donor anonymity which will most likely reduce or limit the donor pool (*Bernstein, 2010; Cohen et al., 2016*). It is unlikely that the French system will be able to recruit a sufficient number of donors now that the demand will multiply. As import from sperm banks from other countries is forbidden, the old solution of French patients looking for treatment across borders will continue, with online searches added. The second group of restrictions can be deduced from the reasons donors and recipients have to move towards the unregulated system. These may be related to regaining control,

demedicalizing the process, obtaining anonymous or identifiable spermatozoa or finding a co-parent.

Another direct threat to unregulated sperm donation is the abolition of the Danish prohibition to ship spermatozoa from regulated sperm banks directly to consumers abroad. Shipping to private costumers is practised by many sperm banks in the USA but has been stopped in Europe owing to opposition by the regulator in Denmark. A steep growth in this activity was seen in the past decade. Allowing sperm banks to pick up this activity would certainly attract some present users of the unregulated system because it offers a number of certainties, i.e., sperm quality, free of sexually transmitted diseases and avoids some aspects that a number of women find very disagreeable, e.g. negotiation, abusive encounters.

A more general threat to unregulated sperm donation would be improvements of the official route. Victoria (Australia), for instance, made plans in 2019 to start a public sperm bank that would not only increase recruitment of donors and thus reduce the long waiting lists but would also lower the costs (Gorton, 2019). Such plans address two important reasons why people reject the formal system. The public sperm and egg bank explicitly intended to prevent Victorians turning to potentially risky practices, such as unregulated sperm donation (Kelly, 2021). To date, however, they have not progressed further than the planning stage. Moreover, such an initiative is likely to meet financial and practical difficulties. A similar initiative in the UK to establish a National Gamete Bank in 2014 was stopped after 2 years because they had only managed to recruit seven donors (Lea, 2016).

In conclusion, a closer look at the available evidence on connection websites shows that there is little hard evidence of major problems. The formal system is presented as the gold standard but the practices in clinics and sperm banks are rarely critically examined. Donor profiles are not verified, donor quota is imposed by law but the means, e.g. central donor register, for adequate control are lacking, genetic screening is limited and legal protection does not exist in all countries for all family types. At the same time, there is no denying that the informal system has its weaknesses. Abuse in some form

or other seems to be the most serious weakness of unregulated sperm donation for which there are no easy or readily available solutions.

Every court case and every spectacular newspaper article is met with an outcry for more regulation and stricter measures. The rationale underlying the new rules in sperm banks is risk reduction. This will drive more people to unregulated sperm donation, thus obtaining exactly the reverse of what the measures were intended to do. Unregulated sperm donation has its risks but it also demedicalizes sperm donation and enables women to bypass societal restrictions.

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