Reproductive Health

RESEARCH

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Reflecting sex, social class and race inequalities in reproduction? Study of the gender representations conveyed by 38 fertility centre websites in 8 European countries

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Abstract

Background Fertility centre websites are a key sources of information on medically assisted reproduction (MAR) for both infertile people and the general public. As part of a global fertility market, they are also a window to attract potential future patients. They give formal and practical information but in the way the information is displayed, they also convey social representations, and in particular, gender representation in its intersectional dimension. The objective is to analyse the sex, class and race representations regarding reproduction and parenthood that are embedded in the content of fertility centre websites in eight European countries.

Methods The 5 most visible fertility centres that appeared in the first places on Internet search were selected for each country under study, except for one country which has only three fertility centres. In total, 38 fertility centre websites were considered for a thematic analysis using an iterative approach and a comprehensive perspective.

Results Each centre details its services and techniques according to the legal provisions in force in its country. However, on all the websites studied, the fertility centres demonstrate a strong gendered representation. The logos generally depict women or parts of their bodies, as do the photos, which mainly show white women with light eyes. The description of the causes of infertility and the techniques offered by the centres also highlights gender differences. Sperm donation, where MAR is reserved for heterosexual couples, is included among the techniques for women with the comment that it will enable them to fulfil their dream of becoming mothers.

Conclusions MAR, and through it the project of having a child and procreative work, is presented as a matter for white, cisgender and heterosexual women, thus fueling stratified reproduction and limiting reproductive justice. The research team formulated guidelines for fertility centres to encourage them to adopt a more inclusive approach in terms of sex, social class and race, so that the diversity of infertile people feel involved and welcome in these centres, to avoid misperceptions about infertility in the general population and to reinforce autonomy and justice in reproductive matters.

Keywords Europe, Fertility centres, Gender, Intersectionality, Medically assisted reproduction, Websites

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Plain English summary

Fertility centre websites are a key sources of information on medically assisted reproduction (MAR) for both people undergoing MAR and the general public. As part of a global fertility market, they may also be a window to attract potential future patients. In this context, they convey formal and practical information but also, through their content, narratives and visuals, social representations. The objective is here to analyse the gender representations of reproduction and parenthood that the 38 European fertility centres under study convey through the texts and images they display on their websites. Each centre details its services and techniques according to the social and legal provisions in force in its country. However, on all the websites studied, the fertility centres demonstrate a strong gendered representation, including in terms of social class and race. MAR, and through it the project of having a child and procreative work, is presented as a matter for white, cisgender and heterosexual women, thus fueling stratified reproduction and limiting reproductive justice.

Background

Since the birth of the first in vitro baby in 1978, medically assisted reproduction (MAR) [1] has been increasingly and widely used. MAR is performed in more than 100 countries throughout the world [2] and approximately 10 million children conceived through MAR have been born since 1978 [3]. Most of the people using or intending to use MAR look for information on the internet [4–7], especially on the websites of the fertility centres that appear first in internet searches. These websites present the MAR techniques and treatments proposed in the centres. They are key sources of information on these subjects for both people undergoing MAR and the general public. The information provided is important because, on the one hand, it conditions free and informed choice of (future) patients and on the other hand it is a source of knowledge on infertility and the possibilities offered by MAR.

Fertility centre websites are all the more important today, now that MAR has moved from being *"an innovative, academic, research activity"* to "*an industrial and commercial service*" [8], p. 305. In other words, MAR operates in a global fertility market [9–11] which is highly competitive. Fertility centres are mainly private and for-profit structures. In this context, they may use their websites as a window to attract future "patient-consumers" [12]. Fertility centres may be considered to "*actively promote relevant services and information on their websites*" [12], p. 397 and present themselves "*as (the) unique and best solution*" [13]. Marketing strategies can then be detrimental to the quality of the information provided [14–16].

Beyond the information provided, fertility centre websites may subtly play on content and narratives to convince and persuade patient-consumers to use their services. Coveney and colleagues investigated 62 fertility centre websites in Belgium, Spain and the UK to analyse the strategies put in place by the centres, through their publicly facing websites, to recruit egg donors [17]. They showed that fertility centres produce specific narratives culturally adapted to attract potential egg donors: an idealised discourse of feminised solidarity in the UK, a "*disconnected tissue exchange*" discourse in Belgium and a mutual benefit sisterhood discourse in Spain. Mohammadi and colleagues studied the narratives of 19 fertility centre websites in Spain regarding egg freezing [13]. They demonstrated that the majority of centres "*communicate emotionally rather than rationally*" (p. 6) to attract women, through for instance a picture of a clock. In the same vein, based on an analysis of 15 UK fertility centre websites, Gürtin and Tiemann observed that the strategy used is to frame elective egg freezing as "*the solution to the modern, educated, successful woman's incommensurable dilemmas*" [18], p. 64.

As these studies show, fertility centre websites convey not only formal and practical information but also social representations. As part of the European research project entitled "Be Better Informed about Fertility. Giving voice to citizens towards improving Assisted Reproduction Techniques for Society (B^2-InF)",[1] we studied the content provided by fertility centre websites in eight European countries, in order to analyse the social representations conveyed on their websites.

Research context

Since it deals with reproduction, the information provided by fertility centre websites conveys gender representations [19–21] in its intersectional dimension i.e. considering sex, class and race[2] representations [22–24].

[1] This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872706. More information on the research project is available on https://b2-inf.eu/ accessed 24 June 2024.

[2] Here we use the concept of 'race' which, from a materialist feminist perspective, refers to social constructions that categorise human beings on the basis of their phenotypic traits, geographical, cultural and/or religious origins, whether real or assumed. Along with sex, gender and social class, race is a key analytical tool for studying the social relations of domination that produce discriminations and inequalities, and how they are intertwined.

The content and way in which information is provided can play a part in reinforcing gender norms, such as the essentialisation of motherhood or heteronormativity, or conversely, it can challenge gender norms, by addressing all people regardless of sex, gender identities and family configuration.

Similarly, as fertility centres are part of the global fertility market, their website content may, even unintentionally, exacerbate existing sex, class and racial inequalities, with MAR appearing to be more accessible to wealthy people and those living in the richest countries. On the contrary, it may attempt to reduce inequalities, to display their inclusivity in order to attract as many patients as possible, including international patients.

The literature shows that MAR embodies a paradox [25], providing reproductive justice while at the same time maintaining or even accentuating stratified reproduction. Indeed it may contribute to reproductive justice, and even to queer reproductive justice as theorised by Mamo [26] by making it possible for anyone who so wishes to become a parent regardless of marital status, sexual orientation or health problems. However, the way MAR is legally framed, medically provided and organised can also (re)produce social inequalities and thus encourage the parenthood of some individuals to the detriment of others [19, 27]. In this context, it is interesting to observe whether this paradox is reflected in the way MAR services are presented and advertised on European fertility centre websites.

The majority of MAR activities, including cross-border reproductive care, are concentrated in Europe and North America. We focused on the following eight European countries: Albania, Belgium, Italy, Kosovo, Northern Macedonia, Slovenia, Spain and Switzerland. These countries were chosen in agreement with the project partners involved in this study and because they represent a variety of socioeconomic, cultural and political contexts within Europe, including in terms of national fertility indicators and MAR framework. In 2021, according to EuroStat,[3] fertility rates in these countries ranged from 1.19 in Spain and 1.25 in Italy to 1.60 in Belgium and 1.64 in Slovenia, while average maternal age at the first birth ranged from 31.6 years in Italy and Spain to 26.6 in Albania.

Regarding MAR, its opportunities, framework and activities are equally diverse as shown in the last report of the European IVF Monitoring Consortium (EIM) for the European Society of Human Reproduction and Embryology (ESHRE) [28]. For some years, each country has had specific laws that regulate MAR activities and access. MAR is restricted by law to heterosexual couples in Albania, Italy, Kosovo, Slovenia and Switzerland, while it is allowed for single women in Belgium, North Macedonia and Spain, and for women couples in Belgium and Spain. The same applies to gamete donation, which is not allowed in all countries. The age limit for women to access MAR also differs between countries, ranging from 42 years in Slovenia to no age limit in Albania. Some of the countries selected, such as Albania, Belgium and Spain, are known destinations for cross-border reproductive care.

Spain is the largest European MAR provider, with the largest treatment numbers and the highest rate of children conceived by MAR per national births—10% in 2018 [29]. It is renowned for having particularly permissive legislation on MAR access and offers technically advanced medicine. Spain is therefore one of the main European destinations for cross-border reproductive care, especially for sperm and oocyte donation, along with Belgium [5, 30, 31], and these two countries attract many nationals from other countries, including outside Europe. In contrast, Italy has a particularly restrictive legislative framework for MAR which results in many residents crossing borders for this purpose [32]. Lastly, most European fertility centres, except in Belgium and Slovenia, are private and therefore profit-oriented.

Based on the EIM report and feedback received from patients, Fertility Europe, a European organisation that represents 30 national patient associations in the field of (in)fertility and is a partner in the B^2-InF project, has established a system for rating European countries according to their legislation, the treatments available, public funding (or reimbursement) and the patient's perspective.[4] According to the criteria of Fertility Europe, the "perfect" country scores 100%. Belgium has the highest score (86%) and Albania has the lowest score (13%), along with Switzerland (33%). Italy, North Macedonia, Slovenia and Spain are in between with scores of 63%, 68%, 71% and 73%, respectively. Due to lack of data, Kosovo could not be scored.

The objective here is to analyse the gender representations regarding reproduction and parenthood that are embedded in the content (themes, words and images) of European fertility centre websites from the eight countries under study. To ensure their continued existence in an increasingly competitive field, or even for profit-making, fertility centres have an interest in attracting as many

[3] https://ec.europa.eu/eurostat/databrowser/view/demo_find/default/table?lang=en accessed April 26, 2024.
https://ec.europa.eu/eurostat/databrowser/view/TPS00199/default/table?lang=en&category=demo.demo_fer accessed April 26, 2024.

[4] https://fertilityeurope.eu/european-atlas-of-fertility-treatment-policies/ accessed 24 June 2024.

patients as possible, national or even international. But, through the gender representations they convey on their website, they may not meet the challenge of addressing "*all people in an inclusive way with a comprehensive perspective of their reproductive life and health and family goals*" [2], p. 477.

Methods

Data collection

We collected the information provided on the websites of the most popular fertility centres in each country. A thematic search was performed using Google Trends in order to select the keywords most commonly used in fertility centre searches in each country. Five keywords (see Additional file 1) were selected and searched one by one in Google, country by country. We selected the five most visible centres that appeared in the first places for each keyword search, taking into account differences of fertility centre size, variety of MAR techniques offered and geographical diversity (if, for example, the centre appearing in second place was similar to the first in terms of these criteria, the third was selected, and so on).[5] When choosing fertility centres, we strictly selected only IVF medical centres that have embryology laboratories and perform in vitro fertilisation. We have excluded fertility counsellors and companies that do not provide direct medical services, for example medical travel companies or sperm bank. In Albania, Kosovo and North Macedonia, due to the low number of fertility centres, the Google tool search was performed using keywords such as "IVF centres" or "assisted reproduction centres", and the five centres that appeared first were selected. Subsequently, the selection of centres was agreed with local experts. For Slovenia, we selected the only three fertility centres officially existing in the country.

The information available on the selected centre websites was collected in the native language of the country. Data collected, including general observations, were copy-pasted in specifically designed thematic templates, focusing on infertility, parenthood, techniques offered, access and target population, human resources, clinical facilities, legal issues, advertising, economic aspects, experience, knowledge and internationality (see Additional file 2). Once the template was completed, it was translated into English and reviewed by a native English speaker. Data collection was carried out between July and December 2021.[6]

The data collected and translated into English were downloaded into text analysis software (NVivo) and coded using an iterative approach. First-level coding followed a deductive approach based on the main themes of the template above, while second-level coding was performed using an inductive approach in order to identify emergent sub-themes (cost and facility payment; infertility definition; infertility causes; MAR technologies; MAR ethics; MAR risks; MAR success rates; definition of parenthood; gender differences in parenthood; etc.) [33]. This thematic analysis was first performed by the partner in charge of this task, and then refined and validated by the other partners. To complete or confirm our analysis for this paper, we returned to the initial templates and manually recoded some data related to sex, gender, class and race issues (marketing approach; sex differences in description of infertility causes; gender differences in the description of MAR; alternatives to MAR; gender and racial differences in visuals). The thematic analysis followed a comprehensive perspective [34] which, for each fertility centre, considered MAR as it was (re)presented and not as it is objectively framed, managed or organised in the centre or in the country.

As the data collected were public and easily accessible on the internet, they were not anonymised. Quotes are followed by the name of the clinic and the country in brackets[7]; they are however presented in English.

Description of the sample

A total of 38 fertility centre websites were explored (Table 1).

The fertility centres investigated were all private in Albania, Spain, and Switzerland, mainly private in Italy and North Macedonia (n = 6/7), and public in Slovenia and Belgium. They had no connection with each other, with the exception of two centres in different countries (Spain and Italy) which belonged to the same Spanish company.

Results: similarities within a mosaic of diversity

Fertility centre websites show major differences in the way MAR is displayed and their services presented, reflecting the range of political, sociodemographic and legal contexts. But we observed strong common characteristics in gender representations underlying the

[5] The fertility centres in the first position very often have paid visibility (Google ads), which means that they are not the first to appear organically. However, the general public sees these clinics as the top ones, so they visit their websites and use their services frequently.

[6] Project n°2021.004, approved 29/1/2021 by the Research Ethics Committee of the University of Navarra.

[7] Abbreviations: Albania (ALB), Belgium (BEL), Italy (ITA), Kosovo (KOS), Northern Macedonia (MAC), Slovenia (SLO), Spain (SPA) and Switzerland (SWI).

Table 1 Characteristics of the fertility centre websites selected

	Nb of centres surveyed	Nb of centres in the country	Nb of IVF cycles in the country	Nb of IVF live births in the country
Albania	5	11*	n/a	n/a
Belgium	5	35	39,489[a]	5954[a]
Italy	5	330*	58,407[a]	12,646[a]
Kosovo	5	n/a	n/a	n/a
North Macedonia	5	7*	2521[b]	n/a
Slovenia	3	3	3146[b]	n/a
Spain	5	493*	148,165[c]	33,205[c]
Switzerland	5	35*	11,163[c]	2204[c]
Total	38			

[a] 2018

[b] 2017 (28)

[c] 2019

[*] Mainly/all private centres

n/a not available

Sources: MAR data from national registers (last available) except for Kosovo, North Macedonia and Slovenia where there is no national register

information provided and the way in which it is provided. Firstly, fertility centres all appear as centres that will be able to fulfil the most basic wish of infertile people: to become parents and, in particular, mothers. This dream-seller dimension appears in the vocabulary used and also in the choice of information explicitly given (or not given). Then, they all essentially, even sometimes exclusively, target women. Information on men is less detailed, less visible and sometimes missing. Finally, as well as targeting women, fertility centre websites seem to be aimed primarily at couples, and in particular wealthy, white heterosexual couples in good health, even in countries where MAR is available to all women and which receive a large number of international patients.

Centres as dream sellers to fulfil women's destinies

Having a child is presented as a fulfilment, as a "*basic desire*" (Neplodnost SLO), a "*common goal: fulfil your desire to have a child*" (OVA SWI). Infertility is sometimes presented as "*a tragedy*" or a "*sad situation*" (GHDC Charleroi, BEL). In this context, fertility centres appear to be dream-sellers—"*latest technology so that your dream of having a child comes true*" (Ginefiv SPA), "*where your dreams come true*" (IVI SPA), "*your dream, our mission*" (Hygeia ALB)—mainly for women as they will help them to fulfil their destiny as mothers.

Selling the dream is part of the advertising and marketing strategy of the fertility centres. All centres present themselves and their performance in highly eulogistic terms, using many superlatives to describe their services and the health professionals working there. They offer reassurance about the long-term experience of infertility treatment and techniques and attempt to destigmatise the use of MAR. They explain that infertility is "*common*" in the country, in Europe and in the world, and point out that the human species is not very fertile. They do not, however, idealise the process, which is described as long and difficult, including emotionally (the reason why some centres offer complementary care, such as Chinese medicine in the Swiss centres, for instance).

Some centres also seek to reassure their potential patients in the face of social criticism that MAR is not natural:

> *"Despite the fear of public opinion, the truth is that fertilization occurs in the laboratory without intervention, as it would naturally occur in the fallopian tubes, and embryo implantation (conception) occurs naturally" (IVF Center ALB)*

When the information is provided, the centres display very attractive success rates by presenting the pregnancy rate and not the live birth rate, the first being always much higher than the second. While the rate of successful live births following MAR treatment is low [2],[8] alternatives other than MAR are rarely approached. Adoption, for instance, is mentioned by only one centre (CPAM Citadelle BELG), and only one centre specifies that "*fertility treatment should not be seen as the only and final option in order to be happy*" (Bernabeu SPA). The

[8] On a global basis, it is estimated that fewer than 1 in 4 patients starting an IVF cycle has a live birth.

possibility of remaining childless, after MAR failures, is never considered.

The dream-seller dimension is also evidenced by the choice of the information provided and by the lack of clear and complete information, as has been observed in other research studies [13, 18]. Legal restrictions are not always mentioned, nor is the cost, which is either not provided or not detailed.

Websites mainly for women

The websites appear to be aimed mainly at cisgender women. It is to them that they sell the dream: "*We ensure that your dream of being a mother comes true*" (IVI SPA), "*to help you realize your dream of becoming a mother*" (IVI ITA). The sites refer almost exclusively to motherhood: "*Let's start the extraordinary adventure towards motherhood*" (FIV Valencia SPA), "*Pregnancy is a wonderful adventure in a woman's life*" or "*Birth is the most beautiful process that can happen in a woman's life*" (European Clinic KOS). There are no such references to fatherhood or parenthood in general. The visuals, like the logos, also mainly relate to women: they refer to women or parts of their body (pregnant stomach, oocytes) and use colours traditionally associated with the female gender (notably pink).

The description of the causes of infertility, as well as the techniques offered by the centres (often presented by sex), highlight social differences between women and men. For instance, age is presented as the main cause of infertility for women (including because they postpone motherhood for career reasons) and lifestyle factors such as alcohol and tobacco as the main cause of infertility for men. One of the centres does not mention male infertility at all (European Clinic KOS). The effects of age on fertility and success rates are generally discussed and further detailed for women; one centre does not mention male age (Ginekoloska SLO). However, studies have demonstrated that men's age also has an impact on fertility, the risk of miscarriage and genetic abnormalities for the future child [35].

Moreover, where MAR is restricted to heterosexual couples, ICSI-IVF or sperm donation are categorised as techniques for women, affirming that these techniques will enable them to fulfil their dream of becoming mothers (Gliozheni ALB, Humanitas ITA). A section on sperm donation aimed at donors states that "[by donating] *you allow women to experience a much-desired pregnancy*" (CPMA Lausanne SWI). Yet, in a heterosexual context, these two techniques (ICSI and sperm donation) are offered as a solution for male infertility.

Lastly, oocyte freezing is often presented as an option allowing women to postpone motherhood, whereas sperm freezing is never presented as an option to postpone fatherhood.

Websites with little inclusivity

In both form and content, websites do not appear inclusive. Firstly, the terminology used to describe the medical process and techniques is often very technical, and therefore not easily accessible. The description is sometimes very detailed and seems to concern only those already involved in a MAR process, which does not make it easy to understand.

MAR is known to be costly in private centres. Concerns about cost may discourage persons with low income from using MAR. Some fertility centres reassure them by displaying on their website payment facilities and possible discounts: discounts for provincials, hotel discounts for nationals (Bahceci KOS), discount for online appointments (Ginekomedica MAC), a refund if the procedure is unsuccessful through the "*Pregnancy and childbirth guarantee programme*" (Bernabeu SPA) or the "*IVI Baby Program*" (IVI ITA, IVI SPA), a 50% reduction for pregnant women after an IVF procedure (Hygeia ALB), attractive prices, "*at the most reasonable price*" (Ginefiv SPA). However, as previously mentioned, cost is rarely detailed. Even when MAR funding or reimbursement is possible, in most cases the information is not sufficiently clear or detailed to allow estimation of out-of-pocket costs.

Secondly, the sites convey a very heteronormative representation of MAR use. In countries where MAR is restricted to heterosexual couples, the fertility websites do not systematically mention this restriction by explaining that MAR addresses "marital infertility problems" (Gliozheni ALB). Some other websites use the term "couple" as implicitly referring to heterosexual couples (Biogenisis ITA, Nedplodnost SLO). While this heteronormative representation may be expected in these countries, it is more surprising in countries such as Belgium and Spain, where access is available to same-sex couples or single persons. In Belgium, for example, there is a distinction in the approach to the parental project: such a project appears to be evident for heterosexual couples, but for single women and women couples, it always comes with the qualifier "*for those who wish to do so* [have a child]" (UZ Brussel, Erasmus, Chirec BEL). In addition, psychological counselling is mandatory for "*special parenthood*" (Citadelle BEL) i.e. families with two same-sex parents or a single parent. This heteronormative, non-gender inclusive representation can also be seen through the invisibilisation of trans, non-binary or intersex people. Apart from gender, there is no reference to people who are disabled or have a health condition (with the

exception of endometriosis). Only one site addresses HIV-positive couples (CPMA Lausanne SWI).

Lastly, all visuals represent women and babies who are white and even blond with light eyes, except on two websites (AZ-Brussel BEL, Kinderwunschbaden SWI). When gamete donation is offered by fertility centres, the websites focus on the matching process: genetic compatibility test (SPA, SWI), biometric scan (SPA, ITA), Perfect Match 360° (SPA, ITA). Only one centre (UZ Brussel BEL) states that matching is limited due to the low number of donors. These technologies aim to improve the likeness between donors and future parents and can be attractive for patients. But the images provided in connection with the proposed matching techniques suggest that in these clinics white parents will be able to make white babies.

Only two centres (UZ Brussel BEL, Bahceci KOS) address the issue of inclusive care and respect for all, stressing that they welcome patients of diverse religions, ideologies, races, political opinions, and disabilities. This lack of diversity is all the more surprising on fertility centre websites that are also intended for international patients who may come from different parts of the world. Many centres target international patients, offering their websites in several languages (up to 11 languages for IVI SPA and Bahceci KOS), or displaying a specific information section for international patients (Newborn MAC, Chirec BEL, Humanitas ITA, Bahceci KOS).

Discussion

Gendered representation of procreative work

Through their websites, fertility centres show a gendered representation of procreative work [36]. Firstly, by mainly addressing cisgender women and invisibilising men, they suggest that procreative work is a woman's business and the responsibility of women. They reinforce what previous studies have already demonstrated: MAR is considered as essentially a matter for women, involving their bodies but also their social, professional and intimate lives [37–39], just like all other procreative issues (contraception, abortion, childcare). This is in part evidenced by the fact that success rates are defined by the percentage pregnancy rate and very rarely by the percentage live birth rate (which is a subject of debate within the medical community). Obviously, high pregnancy rates make the fertility centre more successful and attractive but, from a strict gender perspective, it also reveals that it is the performance of women's bodies that is targeted (achieving a pregnancy) rather than the creation of a family.

Moreover, by stating that their services will make women's dream come true, by presenting motherhood as a fulfilment, the websites contribute to the essentialisation of motherhood, supporting the gender norms according to which motherhood is a social imperative for women in order to have a complete life [40–42]. This finding is in line with Mohammadi and colleagues' research on 19 Spanish fertility centres providing egg freezing. On the websites studied, being a mother is presented as "*inevitable*", as "*mandatory*", as "*the destiny of women*" [13]. This traditional representation is emphasised to convince women, the main targets of the websites, of the need to freeze their oocytes or to use MAR.

Agents of stratified reproduction

The information provided by the fertility centres studied contributes to the representation of stratified reproduction [19, 27]. They favour the parenthood of some individuals at the expense of others, according to their gender, social class and race [43, 44]. The fact that the vocabulary and descriptions are very technical and complex does not allow all the people with little social and educational capital to benefit from clear and accessible information. This may make it difficult for some of them to make a decision to undergo a MAR procedure. The visibly commercial approach and lack of clear information about cost may also deter some infertile people who are economically disadvantaged, especially since we know that affordability is the major barrier to MAR access [2].

Then, by representing only white people on their websites, MAR is suggested as being a matter of white people making white babies, as already pointed out in another study: "*ART is being used to enhance the fertility of married white elites* (…) *producing white babies*" [45] p.845. With the exception of two fertility centre websites in Belgium and Switzerland, this finding surprisingly applies to websites of fertility centres in other European immigration countries such as Italia and Spain, and also to those that target international patients, such as those in Albania and Spain. It reinforces the common and popular collective imagination that infertility is mainly a problem of white people and feeds the stereotype that racialised people such as black people are hyperfertile and therefore do not need MAR [46]. Racial and economic disparities in access to MAR have already been demonstrated in research in the United States [24, 47]. African American women attend fertility centres later than white people [48]. Racialised women report that health professionals discourage them from using MAR or even from having children [49], while racialised men face major difficulties in accessing infertility care [45]. By ignoring racialised people, and population diversity more generally, the websites contribute to the public imagination and racial disparities in access to MAR, as observed by Inhorn and Fakih in the United States: "*in the public mind, the image of infertility almost never includes African American women or other women of color*" [45], p. 845. Some

racialised infertile people may not feel concerned or welcome in these centres.

The same conclusion can be made for people who do not fit in with heteronormativity, i.e. who are not cisgender (who are trans, non-binary, intersex) and in a heterosexual couple (same-sex couples, singles). As already pointed out by Johnson more than 10 years ago in the United States [12], European fertility clinics portray reproduction and parenthood through a heterosexual lens. They under-display the use of MAR to create non-traditional families. This non-inclusive approach on fertility centre websites also applies to people with disabilities or with transmissible diseases. This may discourage some of them from using MAR and creating a family, even though it is now technically possible for them to do so.

Conclusion

To the best of our knowledge, this is the first study to analyse gender representation, in its intersectional dimension, on fertility centres websites in Europe. Through their marketing approach, payment facilities, and special attention to international patients, the websites of the fertility centres studied convey a fairly commercial image of MAR. This is not surprising as the majority of the websites studied were those of private centres, and the most visible centres are most likely to be funded by advertisements. However, this commercial image contributes to stratified reproduction. MAR is presented as a matter for women and as being their responsibility, thus fueling a certain essentialisation of motherhood and a gendered representation of the work of reproduction. The websites reproduce the stereotype of the 'good (future) mother' in Western societies, who is generally represented as heterosexual, middle class and white [49]. They also reproduce the stereotype of infertility as affecting mainly white people with sociocultural capital [49]. The content and form of the websites are therefore far from reflecting "queer reproductive justice" [26]. The commercial approach, along with the non-gender inclusive representation, may implicitly portray prospective patient-consumers as white, heterosexual, with a certain level of education and financial income, and so may deter many people from accessing these services and/or make it difficult for them to make an informed choice. Even if fertility centres serve non-heterosexual people and those with disabilities, the fact that these persons do not find a supportive environment [12] may be dissuasive. The heteronormative approach may also bias the information sought by the general population who wish to be more informed about infertility and MAR.

This gendered and non-inclusive representation of reproduction and parenthood conveyed by the fertility centres may therefore impact MAR use by potential patient-consumers as well as knowledge and misperceptions in general society, including (in)fertility awareness that is a current and important European issue. It may feed unmet needs and demands for MAR and reinforce current barriers to reproductive autonomy and justice [2].

This gender representation may not be surprising in fertility centre websites from countries where MAR access is restricted to heterosexual couples. But it is rather unexpected on websites from countries such as Belgium and Spain, that have a long history of gamete donation for single women and women couples. This non-inclusive display does not mean that care in these centres is actually discriminatory or inappropriate with regard to class, gender, race or health problems. However, it still casts doubt on the true inclusiveness of this medical care. Furthermore, this finding shows that inclusive MAR legislation does not necessarily lead to a representation, or perhaps even medical care, that is free from traditional representations of reproduction and parenthood (whether the centre is private or public). This finding is in line with recent research conducted in France, where the law was revised in 2021 to allow MAR for all women of reproductive age. It shows that despite this admittedly recent change, MAR access and care[9] remain modelled on a gendered representation of procreative work and parenthood [25, 50].

On the basis of these analyses, for each country, the research team has formulated guidelines for fertility centres to encourage them to adopt a more inclusive approach in terms of gender, class, race and physical ability, using simpler vocabulary and less technical descriptions, providing precise information on the cost and payment facilities if any, considering the different family configurations, targeting women and men in a more balanced way and with content and visuals reflecting the racial diversity of the country and/or international patients.[10] Our findings and recommendations are intended to raise awareness in European fertility centres. Health professionals may not be aware of the gender representation conveyed by their centre website, usually managed by media professionals. Similarly, this non-inclusive display may not be intentional. However, these centres, especially private centres, do have the means to offer content and language that is neutral and inclusive, just like any other marketing company.

[9] In France, procedures are state-funded and gamete donations are performed exclusively in public centres.

[10] These national and international guidelines are available on https://b2-inf.eu/guidelines-and-policy-briefs/ accessed 24 June 2024.

As other studies have pointed out, providing better, more complete and evidence-based information is essential, as is improvement of the way the information is displayed, in order to change the gender representations it conveys. The more gender-inclusive the information, the more society's perception of non-traditional families will change and the more people will be better informed. It could also be a strategy for private and public centres to differentiate themselves from other centres by offering another, more reality-based, representation of reproduction and parenthood; and therefore to stand out in the highly competitive fertility market.

Limitations of the study

We set out to explore the five most visible fertility centre websites in each country, which were best positioned in Google searches when seeking information on MAR. This led, for example, to underrepresentation for Spain, which has 493 centres. It would be useful to carry out further analysis by looking at more websites, including those from less visible and less commercial centres.

In addition, as other studies on websites have pointed out, particularly studies on fertility centre websites, the data collected are only temporarily valid, as websites are dynamic data sources that constantly adapt and change their content and its presentation. The results presented should therefore be treated with caution and apply only to the time at which the data was collected.

Abbreviations

ALB	Albania
BEL	Belgium
HIV	Human Immunodeficiency Virus
ICSI	Intracytoplasmic sperm injection
ITA	Italy
IVF	In vitro fertilisation
KOS	Kosovo
MAR	Medically assisted reproduction
MAC	Northern Macedonia
SLO	Slovenia
SPA	Spain
SWI	Switzerland

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12978-024-01890-2.

Additional file 1.

Additional file 2.

Acknowledgements

We thank all the members of the B²-Inf team who participated in data collection and analysis. We also thank Nathaniel Barrett and Nina Crowte for English editing.

Author contributions

VR contributed to the conception and design of the work, the data analysis and interpretation; wrote the manuscript and substantively revised it. ADBS contributed to the design of the work, the data acquisition, and reviewed the manuscript. MF contributed to the design of the work, the data acquisition, and reviewed the manuscript. MLT contributed to the data acquisition and analysis, and reviewed the manuscript. JARS contributed to the data acquisition and analysis, and reviewed the manuscript. JMC contributed to the conception and the design of the work; the data acquisition and analysis; and reviewed the manuscript. KH contributed to the conception and the design of the work; the data analysis and interpretation; and reviewed the manuscript. JS contributed to the data analysis and interpretation; and reviewed the manuscript. FG contributed to the conception and the design of the work; the data analysis; and reviewed the manuscript. MV contributed to the data analysis and interpretation; wrote the manuscript and substantively revised it.

Funding

This study was funded by European Union's Horizon 2020 research and innovation programme (872706).

Data availability

Methodology and main results of the research project are available on https://b2-inf.eu/. The data used and analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Competing interests

The authors declare no competing interests.

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Received: 24 June 2024 Accepted: 14 October 2024
Published online: 19 October 2024

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