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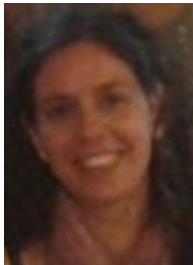
BROCHER SYMPOSIUM: PERSPECTIVES ON ACCESS TO REPRODUCTIVE HEALTHCARE

# Psychosocial needs of women and their partners after successful assisted reproduction treatment in Barcelona<sup>☆</sup>

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**Abstract** It is assumed that pregnancy and parenthood after a period of infertility are unproblematic and gratifying. However, a review of the literature highlights the complexity of the psychological and social consequences of pregnancy, childbirth and parenting after successful treatment with assisted reproductive technology. These experiences, including those following the creation of new forms of non-genetic and/or social parenthood, require investigation in order to understand how women and their partners integrate their journey from infertility to pregnancy and parenthood after successful assisted reproductive treatment. This paper presents results derived from qualitative interviews with 30 pregnant women and 21 couples after assisted reproductive treatment (repeated rounds of individual interviews with the study participants) conducted from July 2010 to April 2014 as part of a larger ethnographic study exploring the psychosocial needs of women and partners following assisted reproductive treatment in Barcelona's. The transcribed text was coded into categories of either predetermined or emergent topics. Prior studies have found that couples who achieve pregnancy after infertility may experience higher levels of anxiety in relation to pregnancy. This anxiety can be linked with a higher risk of complications during pregnancy after assisted reproductive treatment compared with spontaneous conception. However, the evidence concerning adjustment to pregnancy and parenthood is inconclusive. This study highlights the necessity for participants to give meaning to these treatments, given the variability that exists in perceptions of infertility and pregnancy after successful assisted reproductive treatment.

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**KEYWORDS:** assisted reproduction, interviews, pregnancy, Spain

## Introduction

For women and their partners, conception, pregnancy, the birth process and the transition to parenthood constitute a very important and intensely meaningful period. For most, pregnancy will occur when planned, but involuntary childlessness is a reality that is regarded as psychologically stressful for most couples. Some scholars have even claimed that the symptoms of this stress are similar to those associated with other serious medical conditions such as cancer (Johansson et al., 2010).

It is often assumed that pregnancy and parenthood after infertility treatment using assisted reproductive technology are unproblematic and gratifying, yet assisted reproductive technologies are not risk-free, and research in this area highlights the unmet psychosocial needs of women and their partners following successful assisted reproductive treatment as they make the transition to parenthood (Hammarberg et al., 2008).

Despite research into the psychosocial effects of assisted reproductive treatment on the mental well-being of women and men (Golombok et al., 2007; Verhaak et al., 2007a, 2007b; Volgsten et al., 2008), the experiences of women and their partners after conception following assisted reproductive treatment have not been extensively investigated. Existing research reveals poor psychological well-being and the tendency for women and their partners to experience depression and anxiety (Hammarberg et al., 2008; Verhaak et al., 2007a, 2007b). The literature related to parenting and neurodevelopmental outcomes in children conceived during assisted reproductive treatment is also growing. According to Hammarberg et al. (2008), post-natal self-confidence and confidence in parenting ability is lower in couples who utilize assisted reproductive treatment compared with those who conceive spontaneously. This is especially prominent and persistent for couples who have experienced repeated assisted reproductive treatment failure prior to conception, and infertility distress persists even when pregnancy and

parenthood are achieved. Scholarship examining childhood and parent-child relations in families where assisted reproductive technology has been used shows that in childhood, parental expression of more protective attitudes (but not over-protectiveness) and greater warmth towards the child are common. The children appear to have secure attachment in relationships with their parents, and behavioural adjustment is mostly comparable with that of naturally conceived children (Boivin et al., 2009; Gibson and McMahon, 2004). According to most studies on assisted reproduction and neurodevelopmental outcomes in the child, there is no increase in the risk of mental disorders, of cognitive, behavioural, socio-emotional deficits, or of problems in psychomotor development in children after assisted reproductive treatment (Bay et al., 2013). Overall, the current evidence does not suggest that assisted reproductive treatment has a negative effect on the parent-infant relationship (Hammarberg et al., 2008).

Despite the existing literature on assisted reproductive treatment, there remains a need to better understand the background, decisions, behaviours, emotions, knowledge, perspectives, beliefs, motivations and attitudes of women and their partners after successful assisted reproductive treatment in order to improve the care that health professionals deliver to them compared with those who conceive spontaneously. For example, Allan and Finnerty (2007) suggest that there is insufficient research evidence for nurses and midwives practising in this area, and British healthcare staff appear to be unaware of the specific needs of infertile women during pregnancy, birth and early motherhood. Moreover, there are clear gaps in health services once patients are discharged from fertility clinics.

According to Suhonen et al. (2008), individualized care is considered a core value in policy statements and quality standards in healthcare. In Western countries, such as Spain, healthcare is commonly perceived as impersonal and technical, rather than individualized and patient-centred. Little is known about the extent to which individualized care

is implemented, the effect of such care, and the factors that help or hinder healthcare professionals in their quest to deliver high-quality services. Individualised care may therefore deal with the question of how care is organised, but also with the missing imaginative component for communication between practitioner and patient (Suhonen et al., 2000). Understanding how infertility may affect couples' experiences of pregnancy, birth and early parenthood can help reveal the extent and nature of unmet needs, and identify best practice guidance to support women and their partners during the process.

Scholars examining psychosocial needs after assisted reproductive treatment have classified them into several areas based on considerations of: emotional well-being, self-regard, attitudes and adjustment to pregnancy, marital relationship in pregnancy, antenatal attachment to the fetus, childbirth, emotional well-being at the postpartum period, adjustment to parenthood and the parent–infant relationship (Hammarberg et al., 2008). Such categories are also useful for the present paper, which illuminates the under-studied Spanish context. The objective of this paper is to present the contributions from a long-term ethnographic research project undertaken in Barcelona, Spain.

In Spain, particularly in Catalonia, birth and marriage rates have declined, the size of the reproductive-age population has decreased, and there have been changes in external migration flows. At the same time, births have increased in women over 35 years of age and there is greater family diversity in terms of structure and composition. On the other hand, it is estimated that between 8% and 15% of couples suffer from infertility, as defined by not being able to conceive after at least 12 months of unprotected intercourse. More than half of infertile couples will resort to assisted reproductive treatment in order to have a child, which may include processes such as IVF, intracytoplasmic sperm injection (ICSI) and intrauterine insemination (IUI), and anonymous donation of gametes (eggs or sperm) or embryos (Departament de Salut, 2012). Other users of fertility services in Spain may not categorize themselves as 'infertile', such as single women and same-sex couples, but are unable to spontaneously conceive a pregnancy. Current trends indicate that the desire to become a parent and the consequent rate of assisted reproductive technology use are also likely to increase for these groups. In Catalonia, infants conceived by assisted reproductive technology now comprise 4.3% of the births in the region (Departament de Salut, 2014, p. 5).

What is lacking in the published assisted reproductive treatment literature is qualitative research exploring the psychosocial needs based on experiences and perspectives of both parents during pregnancy after assisted reproductive treatment in the Spanish setting. To address this research gap, we used qualitative interview.

## Key research questions

The objective of our research was to assess the experiences of Spanish assisted reproductive treatment users in a clinical setting with a focus on their psychosocial needs after successful infertility treatment, and thus to contribute insights from Spain to the growing body of literature on assisted reproductive treatment care from the users' perspectives. Our main research question was therefore: What are the psychosocial needs of women and their partners following assisted reproductive treatment in the Spanish context?

## Materials and methods

The results presented in this paper are derived from qualitative semi-structured interviews undertaken as part of a larger ethnographic study. Our study design began with a comprehensive review of the empirical research literature published on the topic of assisted reproductive treatment, following which we used a qualitative interview approach to explore how women and their partners transition from infertility to biological parenthood following successful assisted reproductive treatment. This methodological choice was informed by research debates in social science calling for greater attention to individual experiences and perspectives (Allan, 2006).

The interview consisted of four thematic areas, including questions about: (i) the infertility period (e.g. feelings about the difficulties on having a child, the relationship with the partner, family and friends); (ii) experiences during pregnancy after assisted reproduction (e.g. emotions including fears, concerns, and physical sensations or bodily changes); (iii) the labour (e.g. thoughts, behaviour); and (iv) the postpartum period (e.g. emotions or thoughts about parenthood).

## Setting and participants

We conducted in-depth interviews from November 2010 to April 2014 in a large maternity hospital and in primary care centres in Barcelona, Spain. Repeated semi-structured interviews were conducted in two fertility units within the teaching hospital of a National Health Service (NHS) Trust, as well as at a private clinic.

Recruitment of research participants took place in the hospital-based fertility clinic, in the antenatal setting and in the delivery suite. The study participants and their treatments were as follows: 21 couples after homologous IVF or IVF–ICSI, two couples after homologous IUI, four couples after egg donation, one same sex-couple after sperm donation, one single woman after sperm donation and one couple after embryo donation. The sampling was purposeful, i.e. we interviewed a sufficient number of participants to explore the research question in depth, and stopped sampling when saturation of themes and explanations was reached and no new themes emerged in the data. The number of participants was also determined by the researchers' ability to access potential informants in different clinical settings; therefore we used purposeful sampling to recruit participants on the basis of their willingness to be interviewed. We secured ethical approval for this research from the Hospital Clinic of Barcelona, and all participants consented in writing prior to data collection.

## Data collection

Data collection involved repeated rounds of semi-structured individual interviews with the study participants. To conduct semi-structured interviews, an interview guide was developed and followed with probes based on the answers to the initial questions. The interview was designed to explore the four thematic areas described above with the objective of allowing participants to build a rapport with the researcher. The areas were ordered chronologically to encourage interviewees to recount their experiences in a narrative style. All the interviews

were audiotaped, with the participants' permission, and lasted between 30 and 90 min.

### Analysis

The transcribed text was coded into categories of either predetermined or emergent topics. Predetermined topics followed the topics or lines of questioning in the interview guide; however, because these topics were relatively broadly defined, the interview data collection allowed for the informants to offer their own emic perspectives. Furthermore, coding the data also focused on identifying emergent topics as they arose in the narratives. This 'dynamic and fluid process' of coding (Strauss and Corbin, 1998) allows for predetermined topics or ideas to be explored, as well as the emergence of new, not previously considered, explanations.

Coding was performed by EC, and checked by JB. Agreement was reached with regard to all coding and interpretation.

### Findings

Following a description of participant characteristics, two major thematic findings were delineated. First, the data showed that research participants revealed a complexity of reasons for anxiety, and included concerns related to the infertility period and the number of assisted reproductive treatment attempts, facing unexpected need for gamete donation, risk of medical conditions, and the nature of partner and/or social support. Second, participants also revealed that the assisted reproductive treatment process resulted in a narrowing of experiences related to feelings and practice of healthcare and its utilization experienced as 'no right' to complain, and the perceived need to pursue a biomedical model, to the exclusion of complementary and alternative medicine. Each of these findings is addressed in turn below.

### Participant characteristics

In total, 51 participants (30 pregnant women and 21 partners) undergoing IVF/IVF-ICSI and IUI in Barcelona, Spain were interviewed in this study. The partners comprised 20 males and 1 female. They were recruited from different settings, including the fertility clinic, antenatal setting and delivery suite. Participants were aged between 29 and 47 years. Participant sociodemographic characteristics are presented in Table 1.

Participants who conceived through assisted reproductive treatment either received NHS funding or paid for their own fertility treatment and/or pregnancy care<sup>1</sup>. The number of treatment cycles ranged from one to several, with either homologous or donated gametes (Table 2).

<sup>1</sup> Gamete donation is not state funded in Spain for heterosexual couples. Assisted reproductive treatment is funded depending on medical condition, age (women > 18 and < 40 years old, men > 18 and < 55 years old), and for individuals without healthy children. IUI with sperm donation is funded depending on medical condition and the woman's age (< 40 years old), and no more than six attempts are permitted. IVF with gamete donation is state funded depending on medical conditions, the woman's age (< 40 years old), without healthy children, and no more than three attempts are permitted (Boletín Oficial del Estado, 2014).

**Table 1** Sociodemographic characteristics of the study participants.

Characteristic	Participant	
	Pregnant woman (n = 30)	Partner (n = 21)
Mean age in years (SD)	37 (3)	37 (4)
Country of origin		
Spain	28	20
South Africa	1	0
Romania	1	0
Venezuela	0	1
Marital status		
Married	25	–
Single	4	–
Divorced	1	–
Level of education		
Primary studies	4	2
Secondary studies	9	10
University degree	17	9

SD = standard deviation.

#### 1. Complexity of reasons for anxiety

One of the main findings to emerge from the study was that there is a diversity of psychosocial adjustments and related needs expressed by families, particularly female parents, created through assisted reproductive treatment in Barcelona, Spain. These psychosocial needs revealed a greater complexity and variety than the existing literature suggests. Scholars have typically conceptualized general psychological well-being in terms of the frequency and severity of self-reported symptoms of anxiety and/or depression (Hammarberg et al., 2008). According to Gameiro et al. (2015), women who conceived with IVF/ICSI do not experience more symptoms of depression, worse self-esteem or worse mental health during pregnancy than women who conceive spontaneously, but they may experience more pregnancy-specific anxiety. Nevertheless, this study shows that there is a variety and complexity of issues that might be related to the well-being of assisted reproductive treatment users. Moreover, while quantitative studies show that assisted reproductive treatment might increase pregnancy-specific anxiety for some users, the qualitative data in this research shows that reasons for increased anxiety might be related to different sources and vary depending on the stage of the process:

##### a) Infertility period: first attempt at assisted reproductive treatment or previous failures

One of the most important factors determining conception is the age of the parents, especially the woman's age. According to epidemiological studies, there is a decrease in reproductive performance in women aged 35 and older, which becomes significant after the age of 40. Subfertility in older women can be attributed to numerous potential causes, including declining quality of ageing oocytes, decreased ovarian reserve and ovulatory dysfunction (Rowe, 2006). The man's age affects the reproductive capacity of the

**Table 2** Participant/partner age, assisted reproductive treatment and parity.

Participant no.	Age (years)		ART treatment(s)	Parity
	Participant	Partner		
1	36	47	1 IVF	First pregnancy
2	35	35	2 IVF	One miscarriage
3	32	33	1 IVF	One miscarriage
4	40	40	1 IVF	One miscarriage
5	39	39	3 IVF	First pregnancy
6	35	35	3 IVF	First pregnancy
7	31	31	1 IUI	One miscarriage; one premature baby
8	33	33	3 IUI + 1 IVF	First pregnancy
9	36	35	3 IVF	First pregnancy
10	38	NA	1 IVF (sperm donation)	One miscarriage and one infant; multiple pregnancy
11	36	38	1 IUI + IVF	Second pregnancy
12	36	37	1 IUI + IVF	First pregnancy
13	38	39	1 IUI + 3 IVF	One miscarriage
14	44	41	2 IVF (egg donation)	First pregnancy
15	35	35	3 IUI	First pregnancy
16	36	NA	7 IUI + 2 IVF (sperm donation)	One miscarriage
17	34	35	2 IUI + 3 IVF	First pregnancy
18	35	37	2 IVF	Two miscarriages and one infant; multiple pregnancy
19	36	36	1 IVF	First pregnancy
20	35	39	1 IVF	First pregnancy
21	39	39	1 IVF	Second pregnancy
22	43	43	1 IVF (egg donation)	First pregnancy
23	38	NA	2 IUI + 2 IVF	First pregnancy
24	32	34	1 IVF	One miscarriage
25	43	29	1 IVF	First pregnancy
26	36	40	1 IVF	Second pregnancy (premature baby)
27	39	44	3 IVF (egg donation)	First pregnancy; multiple pregnancy
28	43	47	3 IUI + 1 IVF (egg donation)	First pregnancy
29	44	36	4 IVF (embryo donation)	One miscarriage
30	35	NA	2 IVF	Four miscarriages

ART = assisted reproductive treatment; NA = not available.

couple less, but his reproductive capacity also decreases after the age of 40 (Matorras and Hernández, 2007). The age distribution of women treated with IVF varies across Europe (De Mouzon et al., 2010). For many participants interviewed in this study, age produced 'stress', a 'sense of urgency' and 'going against the clock', while assisted reproductive treatment was described as the 'solution to a problem' and 'an assistance to nature', similar to the notion of 'giving nature a helping hand', often described by anthropologists in the context of IVF (e.g. Franklin, 1997; Throsby, 2004), thereby raising expectations related to how pregnancy and childbirth are envisioned. However, even if assisted conception is successful, conception by IVF is nevertheless associated with an increased incidence of several obstetrical and perinatal complications in singletons (Pinborg et al., 2013; Valenzuela-Alcaraz et al., 2013; Wen et al., 2012). Such complications are even more common for multiple births. The causes of these adverse outcomes are, however, poorly understood. The studies are limited by methodological issues such as possible selection biases, inadequate control groups and potentially confounding pre-existing parental factors. Iatrogenic assisted reproductive treatment risks may

come from assisted reproductive treatment *per se* (ovarian stimulation, ovum retrieval strategies, laboratory technologies and embryo transfer strategies). In addition, non-iatrogenic risks derive from maternal and paternal characteristics and include lifestyle factors such as smoking and body mass index (BMI), differences in obstetrical management or a combination of different factors. Subfertility appears to have an adverse effect on pregnancy outcome, independent of its treatment (Raatikainen et al., 2012); nevertheless women who experience multiple failed assisted reproductive treatment cycles or high stress during treatment may be more likely to experience symptoms of anxiety during pregnancy.

In our study, we observed what has been described by Dann (2014), namely that past experiences of repeated IVF treatment or pregnancy loss influenced the manner in which these women approached their pregnancy after successful assisted reproductive treatment and their early motherhood. The tendency among the research participants was to interpret the infertility period as a stress period, with uncertainty, disappointment, nervousness, suffering and 'rollercoaster' feelings. For some participants, the medicalization of the process

made them feel like 'guinea pigs', with ambivalent feelings of hope and frustration. 'Luck' and 'a miracle' are expressions used to explain failure and success of assisted reproductive treatment in our study. After the infertility period, early pregnancy among the interviewees tended to be experienced as a very anxious time, as described by one of the male partners:

It's taken so long to get here, that it's not the same, or maybe it is, we don't know; but a woman who gets pregnant naturally or has no trouble getting pregnant may not think about things as much as someone who's spent two years going through this process.

[(Couple participant 5)]

The interviews with assisted reproductive treatment users in the clinic setting show that these feelings of anxiety were attenuated when they underwent a scan confirming the pregnancy. Verhaak et al. (2007a, 2007b) found that treatment resulting in a live birth led to more positive emotional adjustment. However, the evidence about emotional adjustment to pregnancy in couples after assisted reproduction is inconclusive, as we have observed through our study. The emotional adjustment to pregnancy has been defined via studies describing concepts such as negative and positive attitudes, acceptance of pregnancy (including changes in body shape), formation of a maternal identity, pregnancy behaviours and anticipation of losses of independence (Hammarberg et al., 2008). Our interview narratives show how important previous attitudes (even if they change over time) and methods of coping are, as well as the personality of individuals, for positive emotional adjustment. A few participants felt that after successful assisted reproductive treatment emotions and attitudes are not forgotten, but the satisfaction and joy helps to 'soften the memory of the bad times'.

Women and their partners also reported how the experience of infertility can have adverse effects on self-confidence and self-esteem, as seen in previous studies (Cox et al., 2006; Hammarberg et al., 2008). A male partner described how infertility caused changes in self-perception of masculinity and sexuality:

It affects your self-esteem, which can make you feel unmanly and unable to attract women when you think about yourself in terms of social stereotypes. It's very primal.

[(Couple participant 28)]

#### b) Gamete donation

In our study, assisted reproductive treatment users' narratives show that assisted reproductive treatment is widely accepted, although doubts may arise in the case of egg, sperm or embryo donation. For some people, it is important that the child is genetically related to them. Physical similarities tend to promote the relational aspect of kinship, moral ties and identity of the person (Bestard, 2015). Choosing donation is not always easy, nor is it an option that is typically considered at the beginning of the process, unless the patient is a single woman or a same-sex couple. We found that for heterosexual couples, it is a decision taken following

failure of treatment using the couple's own gametes, due to advanced age and/or medical history. We also found that oocyte donation not only enables pregnancy and birth, but further maintains the bonding and promotes the creation of kinship.

For some interviewees, especially heterosexual couples, the main concerns arose only when donation was suggested by health professionals involved in their care. Some interviewees appeared to find this option difficult to consider, mainly because it was an issue they did not anticipate. They found themselves in a situation in which it was necessary to accept that they have difficulty in conceiving and assisted reproductive treatment is required, as expressed by the following participants: 'It's difficult to assume that there are difficulties and the need of assisted reproduction techniques' (Participant 14); and 'In a way, when you think about it, you see the positive side of this and you want to look for a solution' (Participant 22).

Some people believed that creating families through donated spermatozoa, eggs or embryos may harm parenting and the children's psychological adjustment, as described previously by Golombok (2013), resulting from the absence of a genetic connection between one or both parents and the child. We know that there is no scientific evidence to indicate that these new family forms may be a risk factor for problems of parenting or child adjustment. In our study, few parents expressed concerns related to this. Once the decision was taken, the participants expressed gratitude towards the donor, the couple and the health professionals: 'I admire my wife because she accepted the egg donation straight-away. She didn't have any doubts, either at the beginning or today.' (Couple participant 28)

In Spain, gamete donation is anonymous. Anonymity might help mitigate the perception of 'debt' or 'payment', although few participants felt the desire to meet the donor or have his or her personal details, legally impossible to fulfil in the Spanish context. The participants' different perceptions regarding donor anonymity were related to personal beliefs about kinship. The following quote is an example of acceptance of pregnancy after gamete donation and the couple's desire to meet the donor:

The genetic mother has her place and so does the pregnant woman. Several people have been involved in having this child. It has three parents, well, two mothers and a father. I see this as a privilege and something very special. Somehow, I have a relationship with the donor. I can't decide whether it's emotional, sexual or something else that I can't define, but it's there. Perhaps it would be good to meet her, but that isn't legally possible here.

[(Couple participant 28)]

The tendency among the majority of the research participants was to expect to talk about its origins with the child 'naturally' when appropriate, although more doubts and fears are expressed in cases of gamete donation for 'fear of how others will react': 'You don't know how or when you will talk about it with the child. Therefore, you only want your close family and friends to

know about it. We'll see how it goes.' (Participant 14)

c) Medical conditions and questions of risk

Prior studies have found that couples who achieve pregnancy after infertility may experience higher levels of anxiety in relation to pregnancy. This anxiety can also be linked to the higher risk of complications during pregnancy after assisted reproductive treatment when compared with those after spontaneous conception (Davies et al., 2012; Pinborg et al., 2013; Rimm et al., 2004; Valenzuela-Alcaraz et al., 2013; Wen et al., 2012). Risk assessment in pregnancy is a common practice model and is also applied to pregnant women after assisted reproductive treatment in Barcelona. Even when assisted reproductive treatment is successful and women do become pregnant, the concept of risk persists in the minds of the assisted reproductive technology users. While practitioners are encouraged to identify risks to the pregnancy associated with the underlying medical conditions, participants had a desire at every stage in the pregnancy to be 'normal'.

The concept of 'risk' also remains central in genetic counselling. Pregnant women are exposed to blood testing in the first trimester and then are offered a screening to detect the risk of fetal abnormalities. If the screening results show a high risk, then the follow-up is an amniocentesis, a procedure that brings with it the risk of miscarriage. We also observed the effects of gestational stress at various stages, as explained by the following participant:

At first cautiously, especially getting beyond the first 3 months and then having to overcome amniocentesis; after that, more normally and peacefully. It makes you more aware of everything, fearful and alert. It's normal if you consider how difficult it is to get pregnant.

[(Participant 5)]

Our research findings show that behaviour during pregnancy is influenced by the infertility period (e.g. time to conceive, attempts at assisted reproductive treatment, failures to conceive), prenatal diagnosis (e.g. need to successfully overcome amniocentesis), pregnancy discomfort (e.g. nausea, backache) and associated medical conditions (e.g. hypertension), if these arise. The interview narratives show that there are ambivalent feelings expressed such as 'fears', but also 'hope' and 'joy' during pregnancy.

The experience of infertility can have long-term repercussions on women's feelings even after conception. Some authors suggest that differences in expectations exist between parents of singleton births and parents of multiple births (Baor and Soskolne, 2010; Olivennes et al., 2005; Roca-de Bes et al., 2011; Sheard et al., 2007; Vilks et al., 2009). Women with multiple pregnancies after IVF/IVF-ICSI may have higher maternal expectations than women with spontaneous multiple pregnancies (Gameiro et al., 2015). Interviewees also reported feelings of concern and ambivalence in pregnancy, with representative expressions such as, 'With many fears' (Participant 8), and 'Very excited that it's twins, but it's been very hard and heavy-going'. (Participant 18)

d) Partner and social support

Studies have shown a connection between the quality of a woman's relationship with her intimate partner and mood in pregnancy (Gameiro et al., 2011; Hjelmstedt et al., 2004; Repokari et al., 2007). We observed in our research how there seems to be great individual variability among both women and men in the experience of infertility and its effects on life. The effect of infertility on marital relations is shaped by factors such as personal strategies in coping with infertility, communication between partners, and partners' involvement in infertility treatments. Infertility, as with any life crisis, may enhance personal growth, activate resources and strengthen marital relationships, as reflected in these participants' perspectives:

There have been moments of tension, but the difficulties have made us a team.

[(Participant 14)]

Before assisted reproduction comes a time when you only have sexual intercourse to get pregnant and this is unusual. You're counting the fertile days and sometimes you have sex when you don't feel like it. Afterwards, as I already got pregnant, I couldn't sleep at nights and I have morning sickness and backache. Perhaps it influences my sexual appetite and I have less sexual desire, but my husband has been extremely understanding.

[(Participant 12)]

Several studies have shown positive and negative correlations between prenatal attachment and satisfaction with the relationship with the child's father. Some research indicates that expectant mothers' relationships with significant others are also of importance for prenatal attachment (Fisher et al., 2008; Hjelmstedt et al., 2006). In our study, the interview narratives show that social support received from family and close friends was seen to be vital to their adjustment to parenthood. The tendency among the research participants was the desire to keep the matter private and proceed cautiously regarding whom to tell, what and when.

2. Narrowing of experience

Our second major research finding shows that the process of going through assisted reproductive treatment tends to produce a narrowing of experiences related to feelings and practice.

a) 'No right' to complain

Some authors argue that infertile women are at considerable risk of depression. They affirm that women who became pregnant after infertility had great difficulty in perceiving themselves as pregnant women; therefore, they continue to view themselves as different from other pregnant women. They often had difficulty complaining about even common experiences of which other pregnant women complain, such as fatigue. Their history of infertility often made them feel as though they had 'no right' to complain and they also felt disconnected from other mothers (Fisher et al., 2008; Olshansky, 2003).

In the clinical setting we found variability in the perceptions of the experience of pregnancy among assisted reproductive treatment users, but also during

childbirth and the postpartum period. The majority of the research participants expressed the desire that 'everything should go well'. Our research findings show how experience of the process is related to the age of the participants, duration and number of treatment cycles, individual personality, quality of the relationship and/or social support from the environment, as well as economic and personal resources.

Some studies report findings on post-partum emotional well-being in terms of general psychological symptoms, quality of life and prevalence and severity of symptoms of depression and/or anxiety (Hammarberg et al., 2008). In our study, interviews also reveal variability in post-partum emotional state, similar to spontaneous conception:

The first two weeks were hard. The stitches hurt a little, the baby wouldn't stop crying, I had cramps, I couldn't breastfeed and the baby didn't sleep. We couldn't sleep either.

[(Participant 13)]

We didn't feel different and we didn't have any problem explaining the use of assisted reproduction to our family and friends.

[(Participant 3)]

Very happy!

[(Participant 16)]

Therefore, while some assisted reproductive treatment users indeed had no reason to complain, others experienced challenges that were not always easily expressed given the expectation that a successful assisted reproductive treatment was sufficient to create positive emotions.

b) Need to pursue a biomedical model, to the exclusion of complementary and alternative medicine

Some assisted reproductive treatment users expressed that having a child may become an obsession, and there is a desire to make all the 'right' decisions. Obsessive behaviour is dependent on each woman and partner, their personality, level of desire to have a child, the 'speed' of the process, number of attempts and failures, number of previous children, as well as mutual support and resources. How far should assisted reproductive treatment users be expected to go regarding number of treatment cycles? Our research shows that the limits set by couples in terms of how many treatment cycles they decide to have depend on their emotional well-being, the possibilities offered by assisted reproductive treatment and funding. Given the difficulties and uncertainties that accompany the assisted reproductive treatment process, there is considerable belief in a holistic model and the use of alternative and complementary medicine (e.g. acupuncture) in our sample. However, participants do not always express these interests to health professionals involved in their care, and they might stop non-allopathic care once they start treatment at a fertility clinic. They might want to keep it as a private issue due to a fear of what health

professionals think about it. One of the participants explained:

I had acupuncture and natural medicine to help me get pregnant. I used Chinese medicine, but I can't tell you what it is because it has a Chinese name. It helped me to regulate the menstrual period.

[(Participant 4)]

During pregnancy after successful assisted reproductive treatment, the majority of research participants related that they used alternative and complementary therapies less, due to a fear that these therapies might interfere with the physiological process, and expressed more support for the biomedical model of managing pregnancy.

## Conclusion

This qualitative study demonstrates the complexity of reasons for the anxiety experienced by assisted reproductive treatment users in Barcelona, and shows that the treatment process and the associated expectations simultaneously tend to limit what women and their partners are expected to feel and do. These findings bring attention to the question of how best to support women and couples through the assisted reproductive treatment process.

As demonstrated by Van Balen (2002), infertility has been strongly associated with psychological problems, leading to an increased biomedical focus on the psychology of women experiencing infertility. This psychologization of infertility has had its consequences, usually leading women to be perceived or treated as 'blame victim[s]', resulting in detrimental effects on women's self-respect and self-esteem. Moreover, psychologization of infertility has also pushed women to participate in various psychological research projects. However, it is important to consider how the myths of motherhood produced by the society in developed countries such as Spain create expectations that are impossible for mothers to fulfil and place women's mental health at risk. Women can experience conflict between how they expect motherhood to be and their own experiences as mothers in different areas: labour and delivery, breastfeeding, care of the child, self as mother, relationship with partner, support from family and friends, physical changes and life events. Thus, they can view themselves as 'bad' or 'abnormal' mothers if their experiences do not meet the societal expectations and myths. Women can feel distressing emotions such as anger, guilt, being overwhelmed, anxiety and loneliness (Beck, 2002). In our study, we also observed feelings of ambivalence, as described in association with spontaneous conception. Parents and clinicians might presume that pregnancy and the birth of an infant will lead to a reduction in the psychological distress of infertility and perhaps to elevated mood. We have observed that a range of psychosocial factors govern mood in pregnancy, including partners' involvement in infertility treatments, communication between partners, support of close family and friends and personal strategies in coping with unexpected adverse events. Studies of the psychological aspects of pregnancy after assisted



reproductive treatment in comparison with spontaneous conceptions show evidence that is inconsistent (Fisher et al., 2008).

Our research data support findings reported by Dann (2014) suggesting that women who become pregnant through assisted reproductive treatment need to develop a relationship of trust with the professionals involved in their care, where silences can be respected and moods such as dread, fear or hope might be disclosed according to the needs of the woman. Allan and Finnerty (2007) argue that there is a gap between the evidence available in studies on infertility and care focused on women and their partners during pregnancy after successful assisted reproductive treatment. Infertility can be seen as a public as well as private problem, as treatment draws on public resources, requires policy to regulate it and poses psychological, sociological and ethical dilemmas for the community. In Spain, the systems in which assisted reproductive treatment is delivered are a mixture of public and private provision. Assisted reproductive treatment is limited to certain procedures and consumers; consequently, it has been commercialized, and debates over how assisted reproductive treatment should be funded persist. Our findings contribute evidence to inform health and maternity and family policies, and suggest that greater effort should be dedicated toward formulating patient-centred approaches to the delivery of assisted reproductive treatment care. Given that science and technology are understood to create social change, it is necessary to explore the effects of these technologies on kinship and notions of family, in particular in the area of the creation of new and emerging forms of biological families. In Spain, for example, questions emerge about the current compulsory policy of anonymous donation, yet without information about the donor, the construction of self-identity for the users of assisted reproductive treatment seems difficult (Bestard, 2015).

Overall, understanding how infertility may affect experiences of pregnancy, birth and early parenthood through qualitative interviews reveals unmet need after successful assisted reproductive treatment. These qualitative data illustrate the experiences of women and their partners after successful assisted reproductive treatment and explore the biological facts of human reproduction as well as their social significance of kinship. This study highlights the necessity for participants to give meaning to these treatments, given the variability that exists in perceptions of infertility and pregnancy after successful assisted reproductive treatment. Women who conceived with assisted reproductive treatment may experience more pregnancy-specific anxiety, which is complex and varied, even as they practise lifestyle behaviours that are similar to women who conceived spontaneously. We therefore argue that based on our research in Spain, women and partners should have the opportunity to discuss their worries about pregnancy achieved with fertility treatment.

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