To freeze or not to freeze embryos: clarity, confusion and conflict

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Abstract
Although embryo freezing is a routine clinical practice, there is little contemporary evidence on how couples make the decision to freeze their surplus embryos, or of their perceptions during that time. This article describes a qualitative study of 16 couples who have had in vitro fertilisation (IVF) treatment. The study question was ‘What are the personal and social factors that patients consider when deciding whether to freeze embryos?’ We show that while the desire for a baby is the dominant drive, couples’ views revealed more nuanced and complex considerations in the decision-making process. It was clear that the desire to have a baby influenced couples’ decision-making and that they saw freezing as ‘part of the process’. However, there were confusions associated with the term ‘freezing’ related to concerns about the safety of the procedure. Despite being given written information, couples were confused about the practical aspects of embryo freezing, which suggests they were preoccupied with the immediate demands of IVF. Couples expressed ethical conflicts about freezing ‘babies’. We hope the findings from this study will inform clinicians and assist them in providing support to couples confronted with this difficult decision-making.

Keywords: Cryopreservation, embryo freezing, decision-making

Introduction
Cryopreservation of surplus embryos is a standard practice in most in vitro fertilisation (IVF) units. According to Human Fertilisation and Embryology Authority (HFEA) data, there were 8,959 cycles using frozen–thawed embryos in 2008 in the U.K (HFEA, 2011), which increased to 10,548 cycles in 2010, resulting in 2,032 live births from the frozen–thawed embryo cycles in 2010 (HFEA, 2012). The benefits of freezing good-quality surplus embryos following fresh embryo transfer include the possibility of replacing thawed embryos in several different frozen embryo transfer cycles. This potentially maximises the use of a single egg collection procedure in IVF in terms of transferring embryos on multiple occasions using the embryos created following the egg collection (Trounson & Mohr, 1983). It also eliminates the need for repeated ovarian stimulation and egg collection procedures, and the associated risks, but still gives women another opportunity to have a baby. Furthermore, it gives every good-quality embryo a chance to develop into a baby, rather than be discarded. Whilst these arguments are legitimate, they disguise the complex decision-making by the couples involved, especially in view of the contentious ethical nature of this practice of embryo freezing.

The moral status of the elusive entity ‘the embryo’ has been extensively debated (Haimes & Luce, 2006; Waldby & Squier, 2003). It is argued that the practice of freezing embryos is associated with various ethical dilemmas, such as the paradox of freezing life, especially for individuals who consider the embryo as a ‘life’ (Lyerly et al., 2006; Parry, 2003). Qualitative research has demonstrated that IVF couples can have a range of views regarding their frozen embryos. Some perceive them as no different from ‘virtual children whose development was suspended’ (de Lacey, 2007) and as their ‘babies’ (de Lacey, 2005, 2007; Haimes et al., 2008; Nachtigall et al., 2005; Parry, 2006; Söderström-Anttila et al., 2001; Svanberg et al., 2001; Svendsen & Koch, 2008). To many individuals, frozen embryos are siblings to their existing children (Nachtigall et al., 2005), whereas some see them as ‘seeds’ (de Lacey, 2007). On the other hand, others perceive the frozen embryos as ‘inanimate tissue’ or ‘a bunch of cells’ (Fuscaldo et al., 2007).

There are suggestions that couples perceive freezing embryos as establishing an ‘insurance policy’ for the future; as “backup” embryos in case current IVF treatment fails, or in the situation of anything happening to their existing children (Bankowski et al., 2005; Koryntova et al., 2001; Stoleru et al., 1997). In the sparse evidence
available, couples have also cited the following reasons in addition to the insurance policy for embryo freezing: providing security and hopefulness (Lyerly et al., 2006; Nachtigall et al., 2009; Svanberg et al., 2001), reducing stress (Bankowski et al., 2005; Koryntova et al., 2001; Stoleru et al., 1997) and ‘buying time’ (Haines & Taylor, 2009). There is some evidence that a few couples are sceptical about embryo freezing because of concerns regarding the health of the potential children (Svanberg et al., 2001) and worries about laboratories mishandling embryos (Bankowski et al., 2005).

Most previous studies report the attitudes of patients whose embryos have already been frozen. Little is known about their decision-making process about freezing which occurs at one of the most stressful times during the IVF treatment process. At this stage the embryo cohort includes those of differing potential and the decision on freezing needs to be made within a short time period. Furthermore the outcome of treatment is unknown. To help them through this stage, it is important to understand how patients perceive their embryos at this time and how they make decisions. This paper reports the second part of a larger two-part postgraduate study, which examined two related aspects: first, an evaluation of the influence of embryo freezing on IVF success rates and second, an exploration of the decision-making process through which couples decide whether or not to freeze their surplus embryos. The clinical findings of the first part of the study showed a modest increase in the overall cumulative pregnancy rates following embryo freezing (Goswami et al., 2013). The aim of the second part of the study was to bridge the gap in the literature on how couples make decisions about embryo freezing by interviewing them just after they had completed an IVF treatment cycle. The aim was to provide information for practitioners so that they are better able to assist couples confronted with this difficult decision-making. The central research question for this part of the study was ‘What are the personal and social factors that patients consider when deciding about freezing embryos?’ This paper outlines the issues which emerged from this exploration.

Materials and methods

This study was conducted in a tertiary care centre in the north-east of England, following appropriate approval from the Newcastle and North Tyneside Local Research Ethics committee. Due to the scarcity of evidence in the literature, a hypothesis generating, rather than hypothesis testing, research design was adopted. One possibility was to conduct ‘purposive or systematic sampling’, which involves the deliberate, theoretically led choice of respondents (Pope & Mays, 1995), but due to the lack of previous evidence, ‘heterogeneity sampling’ was conducted, where the categories of sampling were tentative to allow for the widest variation in responses with the goal of reaching thematic saturation (Silverman, 2001). The aim was to recruit couples who had just been through at least one IVF treatment, and who thus had to consider the prospect of freezing embryos. The couples were interviewed while the process of IVF was still a ‘live’, active issue in their minds. Two hundred letters were sent to couples attending the clinics following IVF treatments, as well as those attending ultrasound scans to confirm pregnancy. Sixteen couples expressed interest in participating in the research, comprising those who had been successful as well as unsuccessful following the preceding treatment. The response rate was in keeping with the experience from other qualitative research experience at this centre. After obtaining informed consent, qualitative interviews were conducted with a semi-structured questionnaire informed by issues identified from the literature. Interviews encompassed the couples’ demographic details and fertility history, their views on frozen embryos and embryo freezing, on any benefits from, and any concerns about, embryo freezing, their experiences of freezing if applicable, and the information they received about embryo freezing. Each interview lasted between 60 and 90 minutes. Both partners were encouraged to participate in the interview and express their views without any inhibition. All the participants seemed to have a sufficient understanding and command of English. The interview was ‘semi-structured’, with an open-ended approach and the aide-memoire was only used from time to time to guide the interview. New ideas emerging from the early interviews were introduced in subsequent interviews in order to compare and elicit similarities, dissimilarities, or contrasting views of different individuals, and the nuances of the emerging themes. There were no new themes emerging towards the later interviews, implying that thematic saturation of data was achieved.

The interviews were transcribed and thematic analysis was performed, based on identifying similarities, dissimilarities, conflicts, variations and ambiguities of the responses, using the ‘constant comparison’ technique. Possible relationships in the data were identified and several hypotheses derived, using ‘inductive theorising’. Analysis of ‘deviant’ or negative cases (that is, cases which seem to contradict the emergent themes) was also performed (Pope et al., 2000; Silverman, 2001).

Results

Sixteen interviews were conducted: 5 couples had frozen embryos and 11 couples did not, owing to a lack of suitable embryos to freeze. The broad categories that emerged from the thematic analysis were as follows: the context of couples’ infertility experiences; their fertility treatment history; their views of the frozen embryo; their views regarding the perceived benefits and difficulties of embryo freezing; financial factors influencing their decision on embryo freezing; information that the couples obtained about embryo freezing; couples’ experiences of making the decision to freeze their embryos,
and their views of the clinic professionals. Salient features from these themes which are relevant to clinicians and practitioners in understanding the perspectives of couples, and potentially useful in providing support to the couples, are discussed below. Essentially, all the couples, given the opportunity, were in favour of freezing their embryos, to maximise the chances of having a baby. Nonetheless, their decision-making was nuanced; various facets of their concerns, reservations, views and expectations are presented here.

The context of infertility and the IVF experience
The key driver for couples embarking on IVF treatment was the desire to have a baby. The National Health Service (NHS) funds a maximum of 3 IVF treatments so couples were aware of their limited chances of having a baby. The strong desire to maximise their opportunity to have a baby through embryo cryopreservation was voiced by this interviewee: ‘I think the more treatment cycles that we did, the more it probably would have affected [our decision to freeze embryos]’. Her partner agreed: ‘… yeah, I agree… by the time we got to number three … it would have been last chance saloon’ (I7:1685–1740). They felt pressured by the limitations on the number of funded treatment cycles and this pressure, both emotional and physical, increased in successive treatments, impacting directly on their decision about embryo freezing. An interesting finding in this study was how the framing of IVF treatment changed over time and influenced the views of many couples, who changed from seeing embryo freezing as ‘freezing life’ to perceiving it as a ‘medical aid’ or a tool to achieve a pregnancy. The following couple initially had ethical reservations about the process, but changed their view: ‘… what made us change our mind … on the issue was … having had the experience of IVF … [it] put things into perspective’ (I1:273–290). The male partner later continued ‘… we came to view IVF and even the freezing part just as a “medical aid” … to someone who can’t really naturally have babies’ (I1:927–960).

Conceptualising the frozen embryo
The way the couples envisaged embryos, for example as a ‘living entity’ or a ‘baby’, or as ‘tissue’, underpinned their decision-making process.

Couples who saw embryos as ‘babies’ also saw frozen embryos as babies; the ‘frozen’ prefix did not alter their opinion. The following interviewee perceived his frozen embryos as ‘just my babies in waiting … waiting to get a place to grow … so I don’t think the word “frozen” really matters in that context’ (I11:844–861).

There were also couples who were not quite comfortable with the paradoxical concept of freezing their babies, as this interviewee expressed: ‘I would be thinking: I’ve frozen my kids. (Laughs) …and I don’t think I would like that very much, to be honest … they could turn into children and we’ve actually got them frozen’ (I8:975–1013).

Uncertainties about the concept of the embryo emerged from the interviews. The interviewees’ deliberations showed how their conceptualisation of the embryo changed over different phases of the IVF treatment, reflecting the dynamic nature of the concept of the embryo. One interviewee commented ‘To me, when I’ve got sort of rational, sensible head on … it’s cells. When I’m on the Menopur [laughs] … and hormones are kicking in … then it becomes, I think, a life’ (I4:1632–1677). The couples, although not easily able to articulate and characterise their concepts of the frozen embryos, were not paralysed by the uncertainty of the conceptualisation. Instead, in their deliberations, the couples acknowledged the uncertainty of what the embryo is, but this confusion did not dissuade them from going ahead in their journey through IVF treatment; they moved on in the pursuit of having a baby.

Regardless of the initial framing of their conceptualisation of frozen embryos, many couples came to perceive the process of creating or freezing embryos as a scientific exercise. One interviewee commented ‘it’s just part of the process (I4:1881–1893) … it’s a means to an end, isn’t it?’ (I4:2601–2614). This deliberation further demonstrates the metamorphosis of couples’ views in seeing the embryos, and seeing freezing as a ‘medical aid’ to achieve the goal for a baby, rather than as a ‘life’. Rather than seeing the embryo as the beginning of a baby, which could potentially lead to ethical and moral dilemmas when considering freezing, couples started to view the frozen embryo in a more instrumental fashion, as part of the IVF process, towards the ultimate goal of having a baby. Thus, freezing is viewed as a means to an end, as just another step towards achieving their ultimate objective. This change in view seems to suggest a ‘transformation’ in the IVF journey. Conceptualising the embryo as a scientific or medicalised entity enabled them to overcome their moral dilemma and sense of guilt regarding freezing ‘life’. This transformation allowed them to maximise their opportunities of being a parent on one hand, and overcoming any ethical reservations on the other.

Views on embryo freezing
Couples’ views on the benefits or concerns regarding embryo freezing were as follows:

Extra chance. The experiences of going through IVF treatment, and its many uncertainties, taught interviewees to value embryo freezing more than they had when setting out on IVF, as is captured in this interview: ‘… having been through the process, I very strongly believe that you need to maximise your chances now as I very strongly believe that you should freeze embryos if you get the opportunity…’ (I7:1741–1772).

An appreciation of the extra chance of having a baby from frozen embryos propelled the decision-making of the majority of the interviewees; some described it as a ‘bonus’: ‘… you only have a limited number of goes on
the NHS and by freezing embryos you potentially circum-
vent that a little bit …’ (I7: 953–973). There was also a
sense of freedom in being able to extend the chances of
pregnancy beyond the regulated three NHS-funded
treatments.

Control and ownership. To some couples, embryo freezing
was their opportunity to exercise autonomy in deciding
the fates of the embryos they ‘owned’. This interviewee
mentioned
‘… so if I wasn’t allowed to freeze them, I would have
a lot of problem with that – not knowing what was going
to happen to them … then I’ve lost control of that decision
and because they’re my embryos … so surely it’s for
us to make that decision as to what happens to them …’
(I9:677–752). This deliberation testified that embryo
freezing can reinforce the feeling of being in control
in couples who seem to be suffering from a feeling of
lack of control, due to their subfertility. It also helps
them to exercise their autonomy regarding the fate of
‘their’ embryos, which couples distinctly see as belong-
ing to them.

Insurance policy. When the concept of embryo freezing
as an insurance policy, as cited in the literature, was
introduced to the interviewees, there was a polarised
response, with some supporting and others refuting it
on ethical and other grounds. The following intervie-
wee said in support ‘If this (fresh IVF treatment) doesn’t
work – you fall back on your insurance policy, isn’t it?’
(I7X:948–978).

However, another interviewee disapproved of the
term, not only because it failed to respect the emotions
and aspirations of the couples, but also because it had
business and financial connotations. In her view, the
term was a misnomer, as there was no reimbursement, as
there would be with an insurance policy: ‘… that kind of
terminology kind of terminology to me shows a lack of understanding about why
people go through this … it sounds like the kind of business
decision. So the terminology kind of doesn’t fit really … an
insurance policy… when this one goes wrong it’s an immedi-
ate swap and an immediate replacement which obviously …
it isn’t really for this kind of process’ (I7:849–905).

Freezing embryos was seen by many as being a
‘backup’, in case of failure of the fresh cycle. As one
interviewee said ‘… if something went wrong or if … we
suddenly changed our minds in the future and thought: let’s
give it one more go – there is that back up’. (I4:740–752).
She carried on ‘Again it’s like I suppose what you call belt
and braces – isn’t it …’ (I4:1375–1402).

Concerns. A few individuals had reservations about any
potential harm to embryos from freezing, as there is
uncertainty surrounding the fate of frozen embryos.
One interviewee deliberated ‘… I think somehow mor-
ally it’s not right. Because … what happens if those em-
broys are not placed in a womb where they can grow and
become babies? What happens with them?’ (I1:418–437).
He had mentioned earlier on ‘… Because we wouldn’t
like any spare embryos just left somewhere waiting in limbo’
(I1:384–386).

Many interviewees worried about the safety of the
process, and any ill effects on the health of the result-
ant offspring. The association with freezing food was
a common theme and added to their concern. One
interviewee commented ‘It sounded a little bit scary I
guess’ (I12:253–267). She continued ‘… I know it’s
not done in the same way but if you put something in
your freezer and it’s not wrapped up properly you get
freezer burn and therefore it’s useless afterwards …you
hear about it (embryos) stored for a number of years;
well you don’t store things like food for a number of years’
(I12:359–379).

Other key factors influencing couples’ decision-making

Funding issues. A key finding in this study was that finan-
cial issues had a major impact on the decision-making
on embryo freezing. The majority of the couples appreci-
ated the NHS funding for embryo freezing and found
the 12 months funded storage period to be of huge
benefit, especially in view of the economic climate. One
interviewee commented ‘it (NHS funding) gives you a
chance to move on and research and make your decisions
…it gives you a window of time. I think you need to keep
that… if there was a financial penalty from day one I think
it would put a lot more people in a lot more stressful position’
(I5:1372–1421).

The decision to freeze surplus embryos for the fu-
ture became almost automatic in the presence of NHS
funding, which appears to relieve some of the burden
of decision-making. For example, one couple said with
reference to NHS funding ‘… I think we would just very
instinctively have them (frozen)…there wouldn’t be much
thinking’ (I6:672–721). He later said ‘Yeah, it’s a no
brainer’ (I6:1196–1205).

However, for those couples funding their treatment
privately, the decision-making was more carefully
thought out; the potential expenses of freezing and stor-
ing embryos, and then having a frozen–thawed cycle
were calculated against the cost of a fresh IVF cycle.
One interviewee said ‘so you freeze it, keep it for years and
defrost it and it doesn’t survive…what’s the point? You could
have saved that money… There’s half your money towards
your full IVF treatment so you might get a better chance’
(I9:1451–1566).

On the other hand, for some private fee paying
couples, the positive aspects of a frozen cycle, such as
shorter treatment duration, less invasive treatment,
and lower fees compared with those for a fresh cycle,
almost counterbalanced the negative considerations of,
for example, reduced success from frozen embryos. One
interviewee commented ‘I don’t see that that extra ten per
cent lower (success rate) is going to make any difference.
And it’s almost counter balanced by the fact that the
frozen cycle is so much less intrusive … and there’s less trips
back here for scans and … that I’m paying less (in frozen
cycle, compared to the fresh) so yes, the success rates aren’t

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that good but the other part of it is actually much easier” (I9:1607–1639).

Information regarding embryo freezing. All couples embarking on IVF treatment were given detailed written and spoken information about IVF, including embryo freezing. However, at the beginning of treatment, freezing embryos was a secondary issue, as couples were preoccupied with their immediate treatment, the complexity of which demanded intense attention, especially in the first cycle. This is reflected in this interviewee’s comment ‘We’ve never, honestly, all the way through we’ve never really thought about embryo freezing, … what implications that will have …because we were just taking one step at a time. We weren’t thinking about (it) too much because it was so much to take on board at the time … So anxious [about] getting to the next stage’ (I2:236–334).

A few couples, especially the ones who did not have any embryos to freeze, had little or poor quality recollection about the freezing information. For example, one couple had no idea that the frozen cycle could provide extra treatment in addition to the three NHS-funded cycles. The woman, who had been through two IVF cycles, seemed surprised ‘… So that (frozen–thawed cycle) wouldn’t class as a third go?’ Her partner added ‘I didn’t know that. Well of course, it makes sense now – doesn’t it?’ (I4: 760–842).

Appreciating the huge volume of information, the following interviewee advocated a separate session to discuss embryo freezing ‘… I think … you’d need a separate appointment about freezing embryos and you’d really need to go through that whole decision, I think it would add a lot of info, for you to consider’ (I1:1490–1546).

Couples deciding to freeze embryos often wanted information related to the wellbeing of the future offspring. For example, several weighed any potential harm to the offspring on the one hand, against the benefits of the procedure on the other, before making the decision to freeze. The following interviewee viewed the overwhelming desire to have a baby even at the risk of compromising the health of the offspring through freezing, as ‘selfishness’: ‘We asked the questions: what are the facts? I’d be wanting to know more about the risk factor’ (I5: 1538–1571). He carried on ‘… because obviously I wouldn’t want to bring a child into the world who was so severely disabled due to a factor that I wanted a baby so much that I was going to put their lives in such a lot of trauma … because of my selfishness’ (I5:1572–1603).

The decision
The verdict from all the interviewees was that, given the opportunity, all would freeze their embryos. One interviewee said ‘… Yeah, definitely. I don’t think I would think twice about it (embryo freezing) if the opportunity’s there’ (I14:498–508).

Nonetheless, it is clear from the preceding sections that their decision-making was nuanced and complex, as further indicated by the following interviewee. She was pregnant from the fresh cycle, and in retrospect was relieved not to have any frozen embryos. However, in view of the benefits of embryo freezing, she was not certain about her decision in any future IVF cycle. She said ‘… I’m pleased we didn’t have that opportunity (to freeze embryos) (laughs) because it would have really messed with my mind. … I know it’s an extra chance and y’know if I had to go through this again and we got the choice to have them frozen I probably would have them frozen erm but hopefully – I don’t know’ (I8:1219–1241). It is a key finding of this study that some couples experienced relief at having no frozen embryos after achieving a pregnancy, and hence were able to avoid any ethical dilemma. This suggests that couples might make an ethical compromise by freezing embryos as a result of their desire to have a baby.

Discussion
Contrary to other studies of couples with frozen embryos, where the embryos had already been frozen for a period of time, this study focuses on a different point in the IVF process. It is known that couples’ conceptualisation of frozen embryos can change when the embryos have been frozen for some time. This was evident in the situation that the Swiss couples experienced (Scully et al., 2010), with changing legislation in the country with the introduction of the new law on stem cell research (LSCR) in 2004 (Scully & Rehmann-Sutter, 2006). The couples had their embryos frozen before 2001, and with the new legislation, were faced with the options of either discarding their unused embryos or donating them to stem cell research. These couples perceived the frozen embryos as potential research material and clearly distinguished the frozen embryos from ‘babies’. The emotional attachment to these embryos seemed to have disappeared, and these were perceived by the couples as belonging to the biomedical domain. Thus, the ‘embryo’ can have different meanings to individuals in different socio-cultural time and space (Haimes, et al., 2008). However, in the study reported here, couples were interviewed just following their IVF treatment, and they had just confronted the option of whether or not to freeze any surplus embryos, so this decision was very likely to have been influenced by their conceptualisation of the embryos at this point in time.

The key findings of this study were as follows:

1. Couples do not regard embryo freezing as an obvious or straightforward decision. All the couples, regardless of whether they had the opportunity to freeze their embryos or not, were eventually in favour of freezing embryos to maximise their chances of having a baby. While for some couples, it was a ‘common sense’, ‘straightforward’ decision, this was in light of the uncertainties of the IVF context. Other couples when reflecting on the IVF process articulated their considerations in greater detail, having considered the various pros
and cons of embryo freezing, such as the success rate from frozen embryos, the alternative options available for disposal of the surplus embryos, and the risks versus the benefits of freezing their embryos. This decision was impacted by the limitations on the number of funded treatments, and the experience of the physical and emotional tensions of the treatment. Prospective thinking about the possibility of embryo freezing therefore shows that it can be a nuanced and complex decision to make.

2. The desire for a baby overcomes all ethical concerns about embryo freezing.

Couples experience tension between the morality of freezing and their own increasing vulnerability and stress. The key factor in generating ethical reservations was the dilemma of ‘freezing babies’. For a few couples it was ethically acceptable to freeze embryos, as the embryo cannot be compared with an individual, since it cannot survive independently if not transferred into the uterus under congenial circumstances. However, for most couples experiencing difficulty, the desire for a baby eventually overcame all ethical considerations; it is this tension that might have led them to view embryo freezing as instrumental to their needs/objectives.

3. IVF couples transform their views on embryo freezing to overcome any reservations.

As discussed, developing views on embryo and embryo freezing enabled couples to come to terms with the moral dilemma of freezing, the desire for a baby and their own vulnerabilities. Given that embryo freezing is routinely incorporated into IVF/intra-cytoplasmic sperm injection treatment processes and is thereby normalised discursively, the couples’ view of it as a medicalised process can seem very natural. This transition of the embryos in the perception of IVF couples into a ‘utilitarian’ role is a unique finding of this study. embryo freezing imparts a sense of being ‘in control’ or of ‘autonomy’ to the couples.

The suggestion that embryo freezing reinforces the couples’ sense of control reflects findings of a past study where interviewees perceived benefits from embryo freezing, as it prevented ‘relinquishing control’, and allowed them to determine the fate of their embryos (Nachtigall et al., 2009).

4. NHS funding for embryo freezing may override the ethical issues in the decision-making process.

Funding for embryo freezing, whether NHS-funded freezing or private financial investment, seemed to have a significant influence on the decision-making. The question arises whether the automatic availability of NHS funding for embryo freezing overrides the ethical or other considerations of the decision-making. Conversely, for those who need to pay for freezing privately, the financial implications and ethical considerations may have equal weight in the decision. If there is concern that NHS funding overrides ethical considerations, the option of NHS-funded fresh IVF treatment without embryo freezing could be considered although this would be contrary to the principles of the NHS and the NICE recommendations (National Institute for Health and Clinical Excellence, 2013). Levying a tariff on embryo freezing could mean that more weight and critical thought is given by couples to the embryo freezing decision, rather than making it a routine exercise available for free. This could, however, simply exacerbate inequality amongst IVF couples. Further in-depth research in this area would help in exploring the relationship between funding availability and couples’ moral reasoning.

5. More information regarding embryo freezing may not influence the decision made by couples.

Many couples were not able to recollect information regarding the practical aspects of embryo freezing: its safety, success rates, freeze–thaw regulations and duration of NHS funding for freezing, despite receiving detailed clear verbal and written information. This could be because most couples found the information overwhelming and were preoccupied with the complexities of going through IVF especially the first cycle, when embryo freezing did not seem to be the focus (Carroll & Waldby, 2012; Haimes & Taylor, 2009; Haimes & Taylor, 2011). The question therefore arises as to what is the most appropriate time to give couples detailed information regarding embryo freezing? There could be two options. First, organising a separate information session to discuss the different issues about embryo freezing at the beginning of the IVF treatment, but this would come with logistic and cost implications, and the risk of unnecessarily overloading couples with information. The second option would be to hold a debriefing session for the couples at the end of the IVF treatment, where the issue of embryo freezing would be revisited in detail. This could give couples the opportunity to reflect and make informed decision for the future, and facilitate interaction with others and the exchange of views.

A further recommendation to fertility clinics based on the emergent data would include clinics taking the initiative in facilitating discussion and communication among patients, for example developing a Web-based forum as a platform for patients to share information, views and experiences. Nonetheless, the big question remains whether the provision of further detailed information would make any difference to couples’ decision-making, as the dominant desire to maximise the chances to have a baby has been shown to override all other issues.

Clarity, confusion and conflict: issues for further study

From analysing the repertoire of couples’ considerations, certain key areas of clarity, confusion and conflict were manifest in the couples’ decision on whether to freeze embryos. The main issue that was clear in the mind of all the couples, and the key factor connecting all the
themes, was the desire for a baby being the dominant drive for freezing embryos. Despite having various concerns, given the chance, all couples, including those who did not have the opportunity to consider this option in the last cycle, would freeze their embryos to maximise the opportunities to have a baby.

There were a few issues which confused couples. The embryo seemed to be an enigmatic entity, whose nature couples struggled to comprehend, and they vacillated from one view to another. Couples who initially envisaged the embryo as a living object shifted their conceptualisation to seeing the embryo as a ‘cell’, or as objects generated as ‘part of the process’ of IVF treatment, when freezing their embryos. The embryo thus has a dynamic conceptualisation, which fluctuated with the various stages of treatment, depending on the circumstances of the couples. The subtleties in the nuanced views of the embryo emerged from this study, as in previous studies (Bankowski et al., 2005; Boada et al., 2003; Haimes et al., 2008; Svanberg et al., 2001), along with the view that the meanings attributed to the embryo shifted over the different stages of the IVF process (Haimes et al, 2008).

The confusion experienced due to the potential overloading of information has been discussed.

The major conflict, as discussed was the moral conflict of ‘freezing babies’. Another conflict was in perceiving embryo freezing as an ‘insurance policy’, although it was frequently perceived as a backup in case of an unsuccessful fresh cycle. Although in essence conveying a similar perception, many interviewees had moral objections to the term ‘insurance policy’, when quoted, as a term used by researchers in previous studies (Bankowski et al., 2005; Koryntova et al., 2001; Stoleru et al., 1997). The disapproval of the term ‘insurance policy’ could be because of the implied association between babies and money.

Strengths and weaknesses of the study

The main strength of this study is that it sheds light on areas that are deficient in the literature, with regard to the actual decision-making process behind embryo freezing, and the personal and social factors influencing that decision. A good kernel of original data has emerged from these interviews, which can form the basis of further in-depth research and follow-up studies.

The authors accept that not all aspects of embryo freezing were covered in this study, such as the views of those who strongly decline embryo freezing, the views of those couples who already have a baby, or opinions of women in the older age group. The views of such small groups might well be different. Also, no relationships with religion, education, profession and ethnicity have been captured in this study, and further work needs to be done to explore these areas.

Conclusion

This study is a first attempt to explore the perceptions of IVF couples when confronting the nuanced and complex decision-making of whether or not to freeze their embryos. The clarity, confusions and conflicts of couples during the process have been captured, and these findings should help clinicians provide better support to couples.

While acknowledging the limitations of this study, the framework of data generated can potentially guide future work for further in-depth study to elicit more ideas of couples’ views, as well as provide opportunities to test these hypotheses which may now be formulated from the key findings of this study.

Authors’ roles

M. Goswami co-designed and implemented the study design, conducted the interviews, analysed and interpreted the results, and drafted the article.

A.P. Murdoch had overall responsibility for the post-graduate study of which this work was one part and was involved in co-design, analysis and interpretation of the data, revising the article critically for intellectual content, and in final approval of the version to be published.

E. Haimes co-designed the study, provided support for the analysis and interpretation of the data, revising the article critically for intellectual content, and in final approval of the version to be published.

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Declaration of interest

The authors report no declarations of interest. The authors are responsible for the content and writing of the paper.

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