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ARTICLE

Oocyte cryopreservation for social reasons: demographic profile and disposal intentions of UK users

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Ms Kylie Baldwin received her Masters and Undergraduate degree from Leicester University, UK. She is a Lecturer in Health and Sociology at De Montfort University, Leicester UK, where she is completing her doctoral research which is an exploratory study of 'social' egg freezing. This manuscript is based on her work examining the female users of this technology.

Abstract A small number of studies from the USA and Europe have provided some data on the profile and characteristics of women who have undergone oocyte cryopreservation for what has been termed elective, social or non-medical reasons; however, little is known in a UK context about which women are undergoing oocyte cryopreservation or their reproductive intentions and actions after the procedure. Drawing on data from an exploratory study of 23 UK resident women who had undergone social oocyte cryopreservation, the demographic profile of these women, their reproductive intentions and actions are discussed, as well as their attitudes and intentions towards their cryopreserved oocytes should they never require them in treatment. The study found that, at the time of oocyte cryopreservation, women were on average 36.7 years of age, were university educated, with 65% of the sample holding further postgraduate or professional qualifications. Fifty-seven per cent of the participants were in professional employment. All participants identified as heterosexual and 87% were not in a relationship at the time of cryopreserving their oocytes. Most (88%) participants stated that they would donate unwanted oocytes to research or to other women for use in fertility treatment should they never require them.

KEYWORDS: oocyte cryopreservation, reproductive intentions, social egg freezing

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Introduction

It has been estimated that since the year 2000 around 20 children have been born in the UK from previously cryopreserved eggs (Human Fertilisation and Embryology Authority, 2013, 2014). Oocyte cryopreservation was initially developed as a means to overcome some patients' ethical concerns with embryo cryopreservation, and to provide women with a means by which they could attempt to preserve their fertility when faced with an illness or medical treatment likely to render them infertile (Dondorp and De Wert, 2009). It has, however, increasingly been marketed to women for what has been referred to as 'non-medical' or 'social reasons' (Mertese and Pennings, 2011). This technology has been presented as offering women who are not yet ready to become mothers the option of preserving their fertility until such time as they wish to reproduce, thus providing the potential to enable women to achieve genetic motherhood at older ages (Dondorp and De Wert, 2009; Rybak and Liman, 2009).

Considerable media debate and extensive ethical commentary has taken place on this phenomenon (Dondorp and De Wert, 2009; Goold and Savulescu, 2009); however, little is known about the women who undertake oocyte cryopreservation for 'social' reasons. A recent review (Baldwin et al., 2014) found five peer-reviewed empirical studies of social oocyte cryopreservation (Martin, 2010; Stoop et al., 2011; Hodes-Wertz et al., 2013; Tan et al., 2014; Vallejo et al., 2013) only two of which (Hodes-Wertz et al., 2013; Vallejo et al., 2013) provided data on women who had actually undergone the procedure. These limited data suggest that women who make use of oocyte cryopreservation for 'social' reasons are generally highly educated, in professional employment, single and in their mid-to late 30s (Klein et al., 2006; Knoppman et al., 2008; Nekkebroeck et al., 2010, 2013; Sage et al., 2008).

The use of the term 'social' oocyte cryopreservation has been problematized by authors such as Stoop et al. (2014), who suggest that the use of the term 'social' indicates the absence of a medical indication in the decision to cryopreserve eggs. Instead, they suggest that the decision to cryopreserve oocytes, to protect against age-related fertility decline, should be recognized as a preventative medical treatment and propose the term oocyte cryopreservation for 'anticipated gamete exhaustion', which they suggest better reflects women's motivations for undergoing the procedure. No data, however, are available on the overall numbers of women opting for oocyte cryopreservation for the reason of 'anticipated gamete exhaustion' in the UK, although anecdotal evidence suggests that this treatment is growing in popularity. Moreover, little is known in a UK context about which women are undergoing oocyte cryopreservation or their reproductive intentions or actions after the procedure. In this paper, the demographic profile and disposal intentions of UK resident women who participated in an exploratory study of social egg cryopreservation are discussed.

Materials and methods

Data are drawn from a purposive, non-probability sample of 23 UK resident women who had undergone ($n = 22$), or were about to undergo ($n = 1$), oocyte cryopreservation for social reasons. Participants were recruited from online fora ($n = 12$), from two British fertility clinics ($n = 7$) and through participant referrals ($n = 4$). All participants self-identified as having undergone oocyte cryopreservation for non-medical reasons. Although this was a qualitative study, sections of the data set were subjected to 'quantitative translation' (Boyatzis, 1998) to give a detailed profile of the sample, and these findings are reported here. Ethical approval was obtained from De Montfort University Human Research Ethics Committee on 1 November 2011 (REF 872).

Results

Demographic profile

At the time of undergoing the process of oocyte cryopreservation, participants were on average 36.7 years of age, with 61% of participants cryopreserving their oocytes between the ages of 36 and 39 years. Just over one-quarter (26%) were 35 years or under and 13% were between 40 and 44 years at the time of undergoing the procedure (**Table 1**). All participants were heterosexual, 87% were single and 13% were in relationships (**Table 2**). All were educated to degree level, most participants had postgraduate (39%) or professional (26%) qualifications, and 57% of the participants worked in professional or managerial roles. All were resident in the UK and most ($n = 20$) were of white ethnic origin.

Characteristics of oocyte cryopreservation cycles

Most (57%) participants in this sample underwent, or attempted, just one cycle of oocyte cryopreservation ($n = 13$), over one-quarter underwent a second cycle ($n = 6$) and a small number underwent three ($n = 3$) or four ($n = 1$) rounds of stimulation and oocyte retrieval (**Table 3**). As shown in **Table 4**, at the end of treatment, most women had between 11 and 16 oocytes cryopreserved, with the average number of oocytes stored being 13. The number of oocytes successfully collected, after one or several stimulation cycles, ranged from zero, owing to a failed cycle of treatment, to 34. Most women (86%) cryopreserved their oocytes in clinics and hospitals based in the UK, and the remaining three women underwent the procedure abroad (one in South Africa and two in Argentina).

Although the women identified themselves as cryopreserving their occytes for 'social' reasons, the interviews revealed that, at the time of undergoing oocyte cryopreservation, five of the participants (22%) believed their fertility was threatened by an existing or potential medical condition that could reduce or compromise their ovarian reserve; these conditions included polycystic ovary syndrome, endometriosis, blocked fallopian tubes and the

Table 1 Age at undergoing egg cryopreservation.

Mean age	*<35 years (%)*	*36–39 (%)*	*40–44 (%)*	*Range*	*Standard deviation*
36.7	6 (26%)	14 (61%)	3 (13%)	32–44	2.66