



University of HUDDERSFIELD

University of Huddersfield Repository

Locke, Abigail and Budds, Kirsty

‘We thought if it’s going to take two years then we need to start that now’: Age, infertility risk and the timing of pregnancy in older first-time mothers

Original Citation

Locke, Abigail and Budds, Kirsty (2013) ‘We thought if it’s going to take two years then we need to start that now’: Age, infertility risk and the timing of pregnancy in older first-time mothers. *Health, Risk and Society*, 15 (6/7). pp. 525-542. ISSN 1369-8575

This version is available at <http://eprints.hud.ac.uk/17992/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

<http://eprints.hud.ac.uk/>

'We thought if it's going to take two years then we need to start that now': Age, infertility risk and the timing of pregnancy in older first-time mothers

Abigail Locke^a and Kirsty Budds^b

^aSchool of Human and Health Sciences, University of Huddersfield, Huddersfield, UK and

^bDepartment of Marketing, Lancaster University, Lancaster, UK

Address for correspondence: Abigail Locke Email. a.locke@hud.ac.uk

Short title: Age, infertility risk and the timing of pregnancy

Abstract

Over the past few decades, the number of women having their first babies over the age of thirty-five in most developed societies has steadily increased. Concerns have been raised over this trend amidst warnings of both the increased risk of fertility problems and health risks to mother and child. Despite this, research into the timing of pregnancy in the context of decreasing fertility has been somewhat neglected, with research typically framed in biomedical rather than social terms. However, this area merits closer attention given the contradictory nature of societal messages that simultaneously encourage women to pursue careers and enhance lifestyle, whilst warning of 'risks' of infertility and problems in 'delaying' motherhood. This article is based on a small-scale qualitative study that uses data drawn from eleven in-depth interviews with 'older mothers' about their transition to motherhood. The data was thematically analysed. We found that the women drew upon risk discourses around decreasing fertility and advancing maternal age, and that these discourses impacted on their decisions about the timing of their pregnancies. Some mothers felt that they started trying to conceive at 'non-ideal' times, owing to expectations they held about decreasing fertility. We suggest that the impact of contradictory societal messages around the timing of motherhood need to be more clearly considered for their potential effects on the timing of pregnancy and note how this topic brings the personal, and, by implication, the societal, into conflict with the (narrated) biological.

Keywords: Motherhood, pregnancy, infertility, risk, time, age.

Introduction

In this article we examine risk thinking in relationship to time management. We focus on how 'older mothers' retrospectively document their decision-making over the timing of becoming a parent, in the light of probabilistic discourses of risk and fertility ('risk retrospection', Heyman, 2010a). We consider how these decisions are set against prevailing discourses of 'good motherhood' and societal prescriptions regarding the 'right time' to become a parent. We also consider the impact, and, as the analysis demonstrates, at times the problematic nature, of applying 'broad-brush' approaches to risk management to the relationship between maternal age, declining fertility and women's choices. As Heyman (2010a) notes: "Personal management of the temporal dimension of risks has been little considered in the research literature. But the construction of a time frame impacts significantly on the form of the risk virtual object" (p. 114). Hence the focus of this article on the 'timing of the parental project' (Heyman & Henriksen, 2001, p.78) is novel. Currently there is little research on the effects of these risk discourses on individual's decision making, particularly in the area of timing of motherhood.

The timing of motherhood

One of the few studies which examines women's decision making in the timing of pregnancy considers decision-making by different age groups in Canada (Benzies et al, 2006). They found that '[w]omen believed that current societal expectations for personal independence before childbearing makes older motherhood more acceptable and normative for their generation' (Benzies et al, 2006, p. 630). Moreover, the tenets of contemporary parenting culture in the shape of intensive mothering ideology (Hays, 1996) define 'good' motherhood as overwhelming child-centred, so that that women who do not live up to this ideal fear judgement and the accusation of being a 'bad' mother (Arendell,

2000). As such, 'delaying' motherhood until one is 'ready' for 'intensive motherhood' might be the best option for some women (Budds, 2013)

Timing motherhood and the biological clock

It has been argued that our society is inherently pronatalist, whereby discourses of femininity typically regard becoming a mother as mandatory (Russo, 1976). This is reflected in the negative attitudes held societally towards those who either cannot or do not have children (Gillespie, 2000; Letherby, 1999; Shaw, 2011). As a result of this, in relation to motherhood, the only relevant question is not 'if' women will have children, but 'when', with 'older mothers' being those that are simply 'delaying the inevitable' (Smajdor, 2009). The notion of a biological clock that represents the limited period of time within which a woman can conceive and start a family is a pervasive and powerful discourse within our society. However, as a concept it seemingly operates against a discourse of female empowerment and choice, and, as such, becomes an example whereby the personal comes into collision with the, to some extent, perceived, biological. Through easy access to a variety of methods of birth control, at the present time, women are more in control over their reproductive bodies than in previous generations (Kline, 2010), including issues around the timing of pregnancy. As in-depth studies of media reports within the UK demonstrate (Budds et al, 2013; Shaw & Giles, 2009), the rhetoric of women's 'choice' and agency around the timing of pregnancy is a central discourse at present and is reflective of neoliberal and postfeminist ideologies, which place great emphasis on individualism and choice, and yet which stand in direct opposition to the constraining nature of the 'biological clock'. As Crawford (2006) notes, there is a moral obligation to make the right choices for health. However, as we discuss elsewhere, the freedom to choose the timing of pregnancy is a mixed blessing as it issues moral accountability to individuals who are

held responsible and accountable for the choices they make, particularly in the face of increased risk (Budds et al 2013). Friese et al (2006, p.1551) suggest that some women have used the notion of the biological clock as a deadline through which they negotiate decisions around childbearing and as such 'have been implicitly blamed for their infertility'. It is often assumed that women who delay motherhood do so to pursue a career and that it is a middle-class phenomenon. Such assumptions define 'older mothers' as implicitly selfish (Budds et al, 2013). Older mothers have also been shown to have a higher socioeconomic status and more likely to be in professional occupations (Hammarberg & Clarke, 2005). Indeed, statistics from the Office for National Statistics (2009) seem to support this idea, and demonstrate that women who have babies later, tend to occupy the higher socioeconomic classifications (classes 1 and 2).

The 'older mother'

Over the past few decades in England and Wales the average age of women beginning their families has increased year on year as more women delay parenthood until their late thirties and early forties (ONS 2009, 2011). The mean age at first live birth for women has increased since the 1970s. Statistics from the Office for National statistics (ONS, 2011) show that the mean age at first motherhood in England and Wales in 2010 was 27.8 years, a large rise when we consider that the age of a first-time mother in 1970 was 23.7 years. In comparison with statistics collected in the year 2000, it is apparent that the number of women having babies over thirty-five has increased to one fifth (20 per cent) of all births in 2010, from 17 per cent in 2000. This comes alongside a slight percentage decrease in the number of babies being born to women aged 25-34, which decreased from 58 per cent in 2000 to 56 per cent in 2010. The group of women, who have their first babies from their mid-thirties onward that are generally described as 'older mothers'. Rather than being a purely British phenomenon, a similar trend towards 'delayed motherhood' has been

observed in other developed societies (Beets et al, 2011; Carolan, 2005; Heffner, 2004).

The definition of older motherhood is first and foremost a medical one, based upon risk categorisation strategies, which determine women over a particular age threshold to be most 'at risk' of complications throughout the course of their pregnancy and birth.

Historically, what constitutes an older mother has changed. The medical term describing an older first-time mother, 'elderly primigravida', was reportedly first used in 1958 by the International Council of Obstetricians and was used to describe women having their first babies at thirty-five and over (International Council of Obstetricians, 1958, cited in Barkan & Bracken, 1987, p. 101). Nevertheless, the 'older mother' is a socially constructed category, demonstrated in its varying definitions, as a woman who is either thirty (e.g. Shelton & Johnson, 2006), thirty-five (e.g. Harker & Thorpe, 1992; Nelson, 2004), forty (e.g. Berryman & Windridge, 1991), or forty-five (Glasier, 2007) when she becomes a mother.

Maternal age and decreasing fertility

The age of thirty-five is often presented as the threshold past at which there is a sudden increase in the probability of both infertility and pregnancy-related complications (Bewley, et al, 2005). Indeed, as noted by Heyman (2010b), the use of probability and risk language around this increase invites decision making about accepting or attempting to avoid risk. It has been found that the chances of conception for women decrease from the late twenties onwards (Dunson, et al, 2002), with a suggestion that age-related fertility problems increase particularly after age 35, and most dramatically over age 40 (Bewley et al., 2005; Nwandison & Bewley, 2006). It is suggested that this is supported by the decline in the success rates of IVF past the age of 35 (Piette, et al, 1990). Although less often discussed, male fertility has been shown to decline significantly by the late thirties (Dunson et al.,

2002) and it has been argued that paternal age over 40 should be considered a key risk factor for infertility in couples (de La Rochebrochard & Thonneau, 2003). Abma and colleagues (Abma, et al, 1997) define infertility as the inability for a couple who are not using contraception to conceive within 12 months of trying for a baby. Using this definition, their research suggested that the percentage of infertile women increases from six per cent in women under 25, to just over thirty per cent for women of 35 and over. Furthermore, figures suggest that due to a decline in women's fecundity with age (te Velde & Pearson, 2002), more than one fifth of pregnancies in women aged 35 resulted in foetal loss, increasing to over 40 per cent for women aged 40 (Nybo Andersen, et al, 2000). Perhaps as a result of this observed decline in fertility, women who conceive through assisted reproductive technologies are more likely to be aged 35 or over (Tough, et al, 2004). However, research suggests that use of assisted reproductive technologies to conceive carries its own risks (Tough et al., 2004). In addition, the use of assisted reproduction technologies gives no guarantee of having a child at the end of treatment, with some reports of more than 75 per cent of IVF cycles failing (Brian, 2011).

As a result of these increased 'risks' of both infertility and risks to mother and unborn child, health professionals have expressed concern over the growing trend within the UK and other industrialised nations for women to wait until later in their lives to begin their families, warning that 'deferring defies nature and risks heartbreak' (Bewley et al, 2005, p.589), as they anticipate that increasing numbers of women will experience either infertility or complications within their pregnancies. This medical discourse appears to have been adopted by women when considering the timing of their pregnancies, as the analysis will demonstrate and as such, the women in this study appear to be embodying the time frame (Lippman 1999) – that is, accepting that due to age, they will encounter difficulties in

conceiving and thus attempt to conceive earlier. However, Hansson has argued that the association between maternal age and declining fertility is a social construction 'that does not fully reflect available medical evidence' (Hanson, 2003, p166). Hanson suggests that the association between maternal age and declining fertility in women is derived from a stance which only takes into account the woman and neglecting other 'life' factors and relationships. As Greil (1997; page 1679) notes 'Scholars need to pay more attention to the way the experience of infertility is conditioned by social structural realities'.

Furthermore, Greil et al (2010) note that in contemporary work, more studies now place infertility in social contexts but some still treat it as a medical condition with psychological concerns rather than social constraints. This ties in with contemporary notions of 'emotional infertility' as a concept which denotes women who are 'unable' to have children until societally they are in the 'right situation' to have a baby. The factors included having no partner, pursuing a career or not being in a stable relationship, as noted in the Red Modern Motherhood Report (Red, 2012).

Hanson (2003) further postulates that despite available evidence to suggest that maternal age is no more a factor for declining fertility than any other, the association is widely accepted because it taps into the negative view of female ageing that predominates in developed societies. In line with this, despite concerns over the increased risk of infertility associated with female ageing, in February 2010 the Family Planning Association (FPA) in the UK ran a Contraceptive Awareness Week, the aim of which was to raise awareness of the rate of unintended pregnancies in women over thirty-five and forty. This campaign was developed from concerns that the message about advancing maternal age and declining fertility had 'gone too far', such that 'older' women were being less vigilant with regard to using contraception based on assumptions about their 'declining fertility'. Recent abortion statistics for older women appear to corroborate this concern, demonstrating that in 2011

the abortion rate for 40-44 year olds was more than double that of women under the age of 16 and almost 19,000 women between the ages of 35 and 39 had an abortion (Department of Health, 2012). These statistics would suggest that the number of unplanned pregnancies is high in older women, particularly given that only a very small proportion of all pregnancies are terminated on the grounds that there is either medical risk to the mother, or risk of mental or physical abnormalities leading to severe handicap in the foetus (Department of Health, 2012). All of these arguments focus in on the risks to women of 'medical infertility', exemplifying the confusion in medical discourse between relative risk and absolute risk. As the literature demonstrates, the notion of 'delayed motherhood' is bound up with risk discourses around infertility and health risks to both mother and child from conception (e.g. Bewley, et al, 2005), the focus of this article is on the fear of decreasing fertility specifically and the ways in which the older mothers in the sample discussed their concerns about possible decreasing fertility in relation to the decisions they made regarding the timing of pregnancies, and build upon literature which discusses the medical risks associated with later pregnancies and the implications for women's experiences of pregnancy (e.g. Carolan, 2005; Heyman & Henriksen, 2001; Windridge & Berryman, 1999) .

In terms of risk management, the link between increasing maternal age and infertility is typically conceptualised in probabilistic terms. This means, that despite the impact of age upon fertility altering at an individual level, inevitably all women who sit within the category of over thirty-five are effectively 'tarred with the same brush' because a higher proportion of women in this age category report fertility problems. Although we do not wish to contest the medical literature that advancing maternal age is associated with female infertility, though others have (see Hanson, 2003), we believe it is important to illuminate the associated problems with applying such 'broad-brush' probabilistic models of risk

management. Here we consider, the effects of such models on the decisions that women make regarding the timing of their pregnancies.

Risk, categorisation and timing

It has been argued that a prevalent 'culture of risk' operates as a general concern in contemporary life (Kringeland and Moller, 2006; Lupton, 1999), reflecting the observations made by Beck (1992) around our 'risk society'. With regards to parenting, it is clear that the institutionalisation of motherhood (Rich, 1976), the medicalisation of pregnancy (see for example Cahill 2000), together with the development of more sophisticated medical technologies of intervention, have developed in parallel with a somewhat increasing societal concern with risk, particularly in the obstetric medical culture (Skolbekken, 1995) where it tends to be individualised (Beck-Gersheim 1996).

Tulloch & Lupton (2003), in a critique of Beck's almost macro-sociological take on risk, consider how individuals respond to, experience and think about risks in everyday life in our risk-centred society (Burgess, 2006; Lupton, 1995). Chiefly, they consider 'risk biographies' which are people's constructions of risks and their perceived effects. In this article we accomplish something comparable, whereby we examine 'older mothers' constructions of the risks of infertility, and, following this, explore the way in which they consider the perceived effects of these risks upon themselves (that is in relation to the timing of their pregnancies). Indeed, this is reflective of a precautionary approach to risk, which as Alaszewski & Burgess (2007) note has emerged whereby 'fear of future is given precedence over evidence or lack of evidence of past harm' (p. 349). Moreover, as Green

(2009, p.502) argued we consider the ways in which risk can operate as a rhetorical resource to be drawn on to make actions accountable, objective or neutral

Society's contemporary preoccupation with risk has been linked with Foucault's notion of Governmentality (Foucault, 1991) whereby individuals are positioned within governmental discourses as active citizens, with the capacity for self-surveillance (Lupton, 1999). Implicitly, they are thus accountable to make the 'right' decisions based on the risk information that they have received (Lupton, 1993) in order to avoid 'moral danger' (see Sachs, 1996). As such, O'Malley notes that '[i]n this environment, pregnant women are governed by means of risk technologies, and thus their present lives are shaped in terms of a *probable* future – a future that may never happen but that must be guarded against (O'Malley, 2008, p. 63). Focusing then on the issue of age and declining fertility, and in line with neoliberalist ideals of governmentality, we suggest that once made aware of the increased risk of infertility corresponding with later maternal age, individuals will actively avoid such risks by having children earlier as it is in their best interests, and indeed, their moral duty to do so. Bound up with these ideas are, as we will discuss later, notions of moral accountability. As neoliberal citizens we are positioned as responsible for avoiding risk and therefore become accountable for adverse outcomes in the event that we encounter a problem that could have been avoided. As such, in ignoring the information about increased risks of infertility with advancing maternal age women are held morally accountable should they struggle to conceive at the *later* time at which they *chose* to become pregnant. Moreover, women may be seen as 'to blame' and may be held morally accountable for 'willingly' and 'voluntarily' putting themselves into a higher risk category by 'choosing' to have their first child at a later age (Budds, et al, 2013). Such concerns about

risk and risk management are a reflection of the judgement and surveillance focused on women and potential 'mothers' in our society (Gross & Pattison, 2006).

Categorising populations in terms of risk is common practice and involves the identification of discrete groups in need of specific attention relating to a given risk. Biomedicine and epidemiology can act as "objective" bodies of knowledge', making 'judgments on what behaviours are considered risky and which individuals are deemed "at risk"' (Lupton, 1995, p. 81). However, what is sometimes over looked is that, as Heyman (2010c: 38) notes, individuals within these categories are unique and when categorised some of their variability will be 'selectively disregarded'. Sarangi and Candlin (2003) suggest that a persistent problem in accounts of risk remains the issue of making sense of outcomes in light of population-based, probabilistic risk assessments. Similarly, risk categories may work in an opposing way and present a population as 'at risk' in accordance with other member groups of the population, whereas within these 'high-risk' groups, as individuals they may be relatively low risk. The fertility problems associated with the category, in this case increasing maternal age, are effectively 'spread' across all members of the category, despite the likelihood that many women in this category will have no complications whatsoever. Indeed as Heyman (2010d, p.87) argues: 'individuals included in a high or low risk category may seem to "carry"' this riskiness as a personal attribute' despite having no proof that this would apply specifically to them.

In relation to older mothers, *all* older women will be considered as 'at risk' of infertility. This risk though is a personalised risk that, in the main, has effects on the individual's experience and impacts on the decisions that they make regarding the timing of their pregnancies. In terms of older mothers and fertility issues, the 'risks' of being infertile and 'choosing' to delay pregnancy, tend to be born out as personal narratives and cautionary tales of 'leaving it too late' (Sevon, 2005), unless of course there becomes an

element of societal involvement (and implicit cost implications) through fertility treatment on the NHS in the UK.

By using data drawn from a corpus of semi-structured interviews with a small sample of older first-time mothers, we show that the notion of decreasing fertility has real implications for women's decision making over the timing of pregnancy. For the women in the sample, the risk to be avoided is being eventually childless but there appears to be a tension between this, the biological 'reality' of increasing age, and a personal and societal readiness to become a mother.

Method

This article is based on a small-scale qualitative study based upon data collected from eleven semi-structured interviews with women who had their first babies over the age of thirty-five, collected by Kirsty Budds between the Autumn of 2009 and Spring 2011. As the focus of the interviews was on becoming an 'older-mother', the women needed to be thirty-five or older when they gave birth to their first babies, with their first babies being aged twenty four months or younger. The age of participants ranged from 35 to 43 with a mean age of 37 years and 2 months and they were recruited through personally advertising the study at postnatal groups in Northern England. Kirsty Budds^b attended the groups, discussed the research study and left information and contact details so that any interested interviewees could make contact with the research team. The interviews focused on the transition to (older) motherhood and asked the women to narrate their experiences from deciding to try to become a mother to their experiences of early (older) motherhood. A key focus of the study was on how the women felt that their age had impacted, if at all, either on their experiences of pregnancy or how others, such as health professionals, had treated them during their pregnancies and early parenthood.

Demographically, the participants tended to hold professional occupations as is commonly the case with older mothers, and is reflected in the statistics from the ONS (2009). The study was approved by the University of Huddersfield ethics panel prior to data collection and the interview questions covered aspects of the women's experience of pregnancy, maternity care and early motherhood. Over eleven hours of digitally recorded interview data were collected in total, with ten interviews carried out in the participants' own homes and one in a research room at the authors' institution. The interviews were subsequently transcribed verbatim in preparation for thematic analysis.

Analytic perspective

The data were analysed using a form of thematic analysis (Braun & Clarke, 2006), which involved taking the data through six stages: familiarisation with the data set; generation of initial codes; searching for themes; reviewing themes; defining and naming themes; and producing the report. Following the first four stages of analysis, 'risk' was defined as a key theme, which seemed to permeate women's experience of later motherhood from conception to birth. Two sub-themes were identified under the broad theme of risk: the risk of fertility complications and health risks to mother and baby. This article lays its focus with the first sub-theme and deals with discussions around fertility concerns linked to decision making on the timing of pregnancy. The second theme, health risks to mother and baby has been well documented in literature elsewhere (Carolan, 2005; Heyman & Henriksen, 2001).

Given that the aim of the overall study was to explore women's experiences of 'later' motherhood and their perceptions of antenatal care, issues around perceived risks of infertility *emerged* from the data, rather than being an intended specific focus of the original study. As the analysis demonstrates, concerns over fertility with regards to increasing maternal age was a salient issue for many of the participants and was a clear

factor in their considerations of when to 'try' for a baby. It is important to note the contextual elements of this data. That is, all of the women in this sample who are discussing perceived risks of infertility in relation to the timing of their pregnancies, are discussing these fears retrospectively as they were all mothers at the time of the interview. Therefore their concerns on infertility and timing must be considered in this context, as retrospective 'possible' rather than 'actual' infertility. We note that the discourses may well differ if we were interviewing infertile women about the same experiences.

Findings: Fertility problems, maternal age, risk management and timing

Following in-depth analysis of the data corpus, we found links between many discussions around risks related to older motherhood in all of the eleven participants. Whilst issues around risk in terms of screening issues and timing of parenthood have been well-documented in older mothers (see Carolan, 2005; Heyman & Henriksen, 2001) and indeed were evident in our corpus, a prevalent theme in the analysis, drawn on by seven of the eleven participants, was the risk of fertility problems due to increasing maternal age. It is these discussions that form the focus of this article. In the following analysis we will explore further how the women drew upon decreasing fertility and infertility discourses in discussions of the timing of their pregnancies, and the subsequent implications for their personal lives.

The analysis uncovered a number of interwoven themes; an awareness of risk discourses around increasing maternal age; and personal stories about the timing of pregnancy due to these risk discourses. The overarching theme appeared to be a perceived conflict between the narrated biological (supposed decreased fertility with increasing maternal age) with the social/personal, where the women claimed to not feel ready to become mothers, yet became so because of this ticking 'biological clock'.

The personal effects of the ticking 'biological clock'

As we have already argued, the association between advancing maternal age and declining fertility is based on the principles of probabilistic reasoning, whereby all women over thirty-five are effectively considered at greater risk of declining fertility. All of the participants in this study appeared, to some extent, to adopt this notion of decreasing fertility and other 'risks' of older motherhood. Discourses of the 'biological clock' and the notion that the women might struggle to conceive as 'older women' were prevalent themes throughout the data. However, as the examples will demonstrate, some questioned the 'science' behind these discourses and all of the women related these concerns to their personal circumstances, considering the impacts on their life choices. The participants articulated the personal issues that are typically omitted in discussions of decreasing fertility, but are crucial to understandings of it - namely that many women who find themselves in this situation may not be in the position to think about starting a family. As noted later, this indicates a conflict whereby biological risks compete with cultural messages about the 'right time' to become a parent, but also social aspirations and modern feminist concerns over developing a career and 'having it all'. It is precisely the site at which societal and personal elements conflict that is typically ignored when health/biological discourses arise around risk in older mothers. It marks more clearly the issue of timing, that becomes the focus of this article: we consider what the implications are of the societal risk discourses of infertility and older motherhood for personal subjectivity and decision-making around the timing of pregnancy. This ties into a precautionary approach to risk whereby the women became parents earlier than they would have wished to in order to avoid the risks of infertility.

In the following extract, Laura questioned the available evidence in relation to her personal circumstance. Laura had her first baby at the age of thirty-five. She had been in a long-term relationship in her twenties, which subsequently ended when she was in her early thirties. Following this she met a new partner and, owing to concerns about age-related infertility, she claimed that they made the decision to try for a baby early on in their relationship.

So the other thing I would say that when you read on the internet about pregnancy and everything, I find it goes on about age a lot in there on the internet. And like I was reading about getting pregnant that sent me into a complete panic because it just was, y'know all the stats, it just seemed were against you completely. Then I spoke to someone else who's a friend, who's a doctor and she said that the stats include everyone from all walks of life. So other things have a big factor on it, apart from age so your lifestyle and how healthy you've been and things like that. (Laura, aged 35).

In this extract Laura discussed the risks of age-related fertility problems. Her concerns over the risks were based upon statistical information she had taken from the internet which suggested that age hinders chances of conceiving. Again, Laura discussed how this information she had read impacted on her subjectivity and personal decision making concerning when to have a baby: claiming that it sent her into a 'complete panic' over her perceived ability to conceive. As such, she adopted a position of one who is 'at risk'. However, in this extract Laura qualified this information noting that the risk category grouped together very different women and there were problems with applying the broad-brush of probabilistic models to age/infertility and critiqued them by discussing other things that she had learnt affect women's individual fertility, namely living a healthy lifestyle: 'Your lifestyle, and how healthy you've been and things like that.'

An issue raised by many of the participants was the notion of the 'biological clock', that is the feeling of running out of time to conceive a child, and the effects of this on the timing of parenthood. For example, as Kim noted in the extract below, concerns with reaching thirty-five were tied up with notions of the biological clock.

I think there's sort of there's this um, this idea that your biological clock starts ticking at thirty-five and it stops ticking at forty and you've only got this five year window and um, and I think sort of, I never had any tests regarding my fertility or anything so I didn't really know what it meant for myself and for my body, but um, I think it's a sort of, it's just a fear because I never really imagined my life without children. And I was, I think I was also worried how I would deal with the fact if I couldn't have children. Um, also because I know of a couple of um, two of my friends who um couldn't have children and who then went through a few IVF cycles unsuccessfully and endless discussion of whether to go for abortion, er adoption or not and um, and they both decided against adoption. (Kim, aged 37)

This quote indicates the personal effects of these common risk discourses of infertility/maternal age based upon the principles of probabilistic reasoning. Kim invoked the notion of the biological clock and the 'five year window' between the ages of thirty five and forty, before the clock 'stops ticking' and women find it much harder to conceive. She, as did other participant, personalised this to her own experiences: that she was unaware of her own fertility levels but was anxious about a potential inability to become pregnant because having children formed part of her life plan. She went to refer to friends who had difficulties conceiving in order to justify her claims, effectively evidencing that this was not simply anxious thought, but that she knew people who have experienced exactly these problems. Anxiety over perceived difficulties with conception appears to be common place

for women within this particular age category and, as this sample shows, expected poorer fertility were treated as the norm. Interestingly, this is despite the figures which note that although fertility complications increase amongst this category, pregnancy is still a probable outcome for many. The widespread adoption of this risk discourse, as indicated by this study, has a knock on effect for these women, in that it affects their decision making on the timing of pregnancy. That is, some of them decided to become mothers at a time that was not necessarily ideal owing to concerns that biologically they only had a limited window of opportunity in which to do so. This becomes a point at which the social comes into collision with the biological. There are stark tensions between societal notions of the 'right time' to become a parent, and the 'biologically optimal' time for motherhood.

Timing motherhood: The biological in conflict with the social

A key issue that arose for the women in our study was the tension between the narrated 'realities' of biology, that is decreasing fertility with age, in direct conflict with societal and personal circumstance. In the following extract, Rebecca critiqued the assumption that maternal age leads to an increased risk of infertility. Indeed, there was an inference, in a later extract, that she was using her perceived decreasing fertility as a method of contraception, yet here, she refers to the issue of her fertility running out as a reason to conceive in less than ideal circumstances. However, what was critical here for Rebecca, (as we will see later she was the only now single mother in the participant sample) is that she was claiming that an individual approach to fertility would be more appropriate and would be a way that would stop women, such as herself, conceiving a baby at a time that was not personally ideal for them, such as feeling they were in an unsuitable relationship. This extract is a stark demonstration of how personal perceptions

concerning the 'correct' timing of motherhood come into conflict with perceived biological limitations of fertility.

It's just touch and go, I mean I don't erm. I know people talk about the risks of being infertile as you get older I think that it's more, I think it's more, more down to sort of y' I think more emphasis should be placed on the individual because I think that we're individually quite different and I think it would be helpful if people knew earlier on how, how fertile they were and how long, you know what their chances were. Hmm.

Um, because if, if somebody had said to me you would have no problem getting pregnant right up until the age of forty-five, I, I probably would have waited even longer to be in a relationship and have that support. But it's because you just don't know, that I kind of you know I got to thirty-five and I thought, y'know I don't want to risk you know, it, it was in my life plan having children, don't want to risk not ever having children. (Rebecca, aged 35)

In this extract, Rebecca built an account of age-related fertility problems based on a critique of generalised approach to risk. Like others in the study she did this by drawing on the notion of 'individualism'. Rebecca acknowledged the association between declining fertility and maternal age: 'People talk about the risks of being infertile as you get olderd, yet sought to put this in perspective by discussing what she believed to be important – namely individual levels of fertility. As has been noted, one of the biggest limitations in applying population-based model to risk outcomes is the fact that individual differences are hidden - the individual takes on the level of risk associated with their category, rather than the degree of risk they may face as an individual (Heyman, 2010d). Indeed the actuality is that a contingency will or will not come to pass, that is a woman will or will not fail to

conceive. Rebecca inferred that the lack of knowledge of fertility at an individual level, had strong implications for the timing of her pregnancy, as she states: 'if somebody had said to me you would have no problem getting pregnant right up until the age of forty-five I, I probably would have waited even longer to be in a relationship and have that support'. As it was, Rebecca was unwilling to take the risk and became pregnant straight away. Owing to her membership of the category of older mothers, Rebecca positions herself as 'at risk' of fertility problems and ultimately involuntary childlessness: 'I got to thirty-five and I thought, y'know I don't want to risk you know, it, it was in my life plan having children, don't want to risk not ever having children'. This last line is particularly telling and marks the differences between prospective and retrospective risk. Her concern over her risks of infertility emerged as an account and justification of her single motherhood and she suggested that had she been aware of her individual level of fertility that she would perhaps have waited longer to meet the right partner, rather than becoming pregnant in her existing "complicated relationship, which ultimately ended. This was significant for Rebecca, as throughout the interview, she spoke about some of the difficulties she was experiencing being a single mother. Thus we can see here the direct effects of probabilistic risk modelling in relation to age/fertility, the ways in which it permeates common societal discourses, and the resulting influences on women's subjectivity and life choices, that is the timing of pregnancy.

In the following extract, Laura discussed how her attempts to conceive were timed in accordance to information that she had obtained from the internet regarding declining fertility with age. Prevailing risk discourses are in direct collision here with women's actual practices and decision making. That is, because of a fear of infertility initiated through the widespread communication about the notion of the ticking 'biological clock', women are effectively 'panicked' into making crucial and life changing decisions before they are fully

ready to do so. Thus, in essence, they are panicked by nature as represented in popular medicine.

Prior to this extract Laura had been discussing her knowledge of statistics which seemed to suggest that women over thirty-five would experience delays with conception.

'Cos I was in a panic before I even got pregnant. That it just wasn't gonna happen or it'd take two years or something. So that's why, you know we hadn't really been together that long (aside to baby: oh thanks, thanks darling). We hadn't been together that long but we thought if it's going to take two years then we need to start that now. (Laura, aged 35)

For Laura, as with other participants, her concerns with decreasing fertility caused her to have strong concerns over the length of time it might take her to become pregnant, and even called her to question whether she would succeed in becoming pregnant at all. She expressed this in terms of being in a state of induced 'panic'. As such this becomes another analytic example, where the interpersonal context is brought into temporal consideration. This is an important emergent finding for this research. In turn, these concerns had implications for her subsequent actions in terms of timing her pregnancy as she claimed that she was trying for a baby before her relationship had been completely established and, arguably, before she, and her relationship, felt fully ready for the responsibilities of parenthood. Laura made explicit reference to information that she had read regarding maternal age over thirty-five and the length of time it takes to conceive before going on to document how she 'got pregnant with (baby) straight away pretty much'. As such, the fertility complications commonly associated with this group did not apply individually to Laura, and indeed to the other women in the sample.

Owing to the way that probabilistic reasoning applies the same level of risk to all members of the particular category, Laura still claimed to have experienced the anxieties associated with being 'at risk' of infertility. Indeed, later on in the interview, she explicitly described the 'worry' that this caused her and inferred that this information contributed to her decision to start trying for a baby earlier when her relationship was still in its infancy. This demonstrates how risk categories and the prevailing discourses around them may impact upon an individual's subjectivity and life 'choices'. For Laura, her concern about her fertility emerged as a justification for starting a family so early on into a relationship: 'So that's why, you know, we hadn't really been together that long'. Daisy provided another example where one of the mothers discussed making the decision to try for a baby in response to concerns over infertility especially in terms of the potential unreadiness of her partner and her baby's father:

And he's quite a lot younger than me. He's a toy-boy, he's um six years younger than me. Um, so at the time he wasn't ready to settle down or anything. I didn't want to rush him too much but um, he did eventually so er haha...I managed to pin him down erm, and then I was really sort of conscious, I've been married to er just over two years now, I was really sort of conscious because of my age that I wanted to sort of get on with it and have a child as soon as I could really. (Daisy, aged 37)

Once more, this quote illustrates the ways in which the personal collides with the perceived biological, and the interpersonal context in which concerns about time and risk are at play. A personal factor that complicated the decision making for Daisy was related to the age of her partner – a 'toy-boy' who was six years younger than her who was not ready 'to settle down'. She claimed that she did not want to rush him 'too much' but

eventually 'managed to pin him down' in what was a 'conscious' decision by her to conceive as soon as possible owing to her concerns over decreasing fertility due to her increasing maternal age.

As the previous extracts have demonstrated, these risk discourses have an effect on women's decision making on the timing of pregnancy with some concerns over the women claiming that their relationships were perhaps 'not ready', yet they still tried to conceive as they were aware of decreasing fertility due to maternal age. The effect of such societal discourses upon individual women should not be under-estimated. Decision making over the timing of critical life events such as the transition to parenthood can have crucial effects on life circumstances. In the following extract, Jackie, like Laura and Daisy, thought that it would take her a while to become pregnant.

And I just kind of I think I thought 'oh yeah yeah, we'll, we'll do it' and kind of made this very logical decision we'll do it and then I became pregnant straight away. I thought it was gonna take ages and ages because of my age. I'd been on the pill nearly twenty years. So I just thought it would take a long time and I thought I would have a long adjustment period. And that didn't happen, just caught on straight away. It was absolutely mad. (Jackie, aged 36)

Jackie discussed how she and her partner made the decision to begin trying for a baby, describing it as a 'very logical decision' based on the likelihood of conception taking 'ages' because of two factors: her age, and because she had been taking an oral contraceptive pill for a long period of time. But as she noted she 'fell pregnant straight away'. This was significant for Jackie because in her interview she narrated how she had not originally wanted children, but changed her mind in response to her husband's strong desire for a family. The length of time she anticipated it would take her to become

pregnant after coming off the pill, owing to her age, would thus act as an 'adjustment period', whereby she could come to terms with the idea of having children. This, she felt, would be important to her in relation to timing and coping with the transition to motherhood. The adjustment period was effectively 'sold' to Jackie through the blanket assumption of age-related fertility complications. As it was, Jackie became pregnant almost immediately and this was a possible factor in her severe prenatal depression, which she later successfully recovered from. This extract demonstrates clearly the possible negative impact of these risk discourses on women's decision making with regards to the temporal dimension of timing a baby.

In these extracts we can see that, for the participants in our sample at least, decisions were made on the timing of their attempts to become pregnant based on the widespread discourse of increasing fertility complications as a result of maternal age. This analysis demonstrates that this assumption can have far-reaching effects for new parents. Whilst for Laura, Daisy and Jackie above, although the timing was not ideal, that is that they all claimed to have starting trying to conceive due to concerns with increasing maternal age rather than ideal personal circumstance, their pregnancies (and relationships) worked out successfully. The strain that having a child can place upon relationships has been well documented. Therefore, conceiving a child at a time that is personally not ideal, as many of the women in this article have claimed, may potentially exacerbate any negative impact placed upon relationships during the transition to parenthood. Moreover, conceiving at a time which is personally felt to be the 'wrong' time may have severe implications for women's subjectivity. As Jackie noted, she became pregnant much quicker than she expected to and felt that the lack of an adjustment period triggered her prenatal depression. However, anticipation of reduced fertility levels had an alternative effect, as demonstrated herein the case of Rebecca, whereby she appeared to

have treated her assumed 'declining fertility' as a reason for not partaking in contraceptive precautions prior to the conception of her child.

Rebecca was in what she described as a 'complicated' relationship with a partner who lived in another country when she became pregnant with her first baby. Rebecca was the only woman who classed herself as a 'single mother' amongst the interviewees, and, as noted above, Rebecca cites her presupposed lower fertility as a reason for not taking full precautions to prevent pregnancy:

I think certainly his father, you know we, we'd kind of talked about the risks, we weren't taking any erm, weren't using any contraception and I think you know I, you don't know how fertile you are for a start, I kind of thought the chance, you know, if we carry on seeing each other, it's probably going to be years before I get pregnant because we don't see each other that often, because I'm of a certain age and um y' know the risks seemed quite small. And I think he definitely would've thought it was, there was not that much chance. And in fact I got pregnant almost immediately um so just goes to show ha ha ha hhh. A lightning strike. (Rebecca, aged 35)

Unlike the other participants in our study, for Rebecca, the risks were not necessarily of infertility but rather were related to the likelihood of her becoming pregnant owing to her domestic set-up. Whilst not using contraception, Rebecca and her partner were not discussing imminent parenthood and believed the chance or 'risk' of conception were low, partly because they did not see each other frequently and also because of Rebecca's age: 'because we don't see each other and because I'm of a certain age...: y'know, the risks seemed quite small'. It is not clear here, how motivated either Rebecca

or her partner were to have a child. And, it appears that she was using her perceived lack of fertility as a reason for not taking full contraceptive precautions. This demonstrates how notions of the 'biological clock' and warnings over declining fertility in older women can have unintended consequences whereby some women essentially view their age as a form of contraception (FPA, 2010), demonstrating that in broad-brush approaches to risk management, group risk can become confounded with individual risk. Rebecca believed her risks of becoming pregnant were small and thus did not anticipate that she would indeed become pregnant, whereas in actual fact, she became pregnant with relative ease. As a result, she related later on in her interview how her pregnancy did not necessarily occur at an appropriate or an ideal time in her life. Within our society, ideological discourses about the 'right situation' to bring a baby into are prevalent, with notions of the 'right relationship' constituting a large part of that. Prevalent notions of this 'right relationship' often invoke references to relationships that are strong and stable – the idea being that these are the kinds of relationships that take years to 'build up' (Cowan & Cowan, 1992). Obviously, such ideas were in conflict with Rebecca's situation. She appeared to frame her answers against a backdrop of awareness of the risk discourses around older motherhood and infertility as a way of justifying or accounting for the timing of her pregnancy, given her position now as a single, older mother. Societally, single mothers are often perceived as 'feckless' and 'irresponsible' (McIntosh, 1996; Phoenix, 1996) and in combination with this, older mothers are often considered 'selfish' (Budds et al, 2013), which meant that Rebecca felt she needed to morally account for her situation.

As we have shown, for many of the participants in our study the risk discourses that identified decreasing fertility with increasing maternal age influenced their decision about pregnancy. We also illustrated the ways in which the personal comes into direct conflict with the inferred biological with some participants discussed trying for a baby before either

they, their partners or indeed, arguably their relationships, were completely ready, because they took the view that conceiving a child would be a lengthy process. We will pick up the implications of these issues in the discussion.

Discussion

In this article we have discussed the implications of biomedical discourses around the perceived risks of infertility and notions of the 'biological clock' for the timing of pregnancies in 'older' first-time mothers. We focus on risks of infertility here, building upon existing research which considers the medical risks to both mother and baby that increase alongside maternal age (Carolan, 2005; Heyman & Henriksen, 2001). We considered how the women in our sample were both adopting notions of decreasing fertility due to their maternal age, whilst noting the inherent tensions in such 'broad-brush' approaches to risk management. The categorisation of 'older' mothers as at 'particular risk' affects the risk trajectory they are placed in, and means that all 'older' women will invariably 'carry' the greater risk trajectory. As a result of 'carrying' this 'risky attribute, the women in our study reported feeling 'panicked' into pregnancy. The women in the sample adopted a precautionary approach to risk (Alaszewski & Burgess, 2007) in terms of future planning, that is, a fear of not being able to conceive, rather than conceiving at the wrong time. Moreover, our analysis demonstrates a confusion between a 'higher risk' of infertility, and infertility in absolute terms, whereby women conflated 'being at higher risk', with 'being infertile'. Thus, for example, Jackie's surprise at conceiving quickly was based upon thoughts that she *would have* fertility problems, rather than feelings that she might be 'at higher risk' of them.

As a result of their concerns, the women in our study claimed to have made decisions about the timing of pregnancy that they inferred possibly warranted justification,

owing to the fact their decisions conflicted with society's norms regarding the 'right' situation and time to have a baby. Therefore, they were forced to make the decision to either become parents at the 'wrong' time – when they weren't necessarily 'ready' or, alternatively, facing possible childlessness owing to concerns over fertility problems associated with increasing maternal age. The participants discussed the perceived risks of infertility claiming that these contributed to the reason why they conceived at a time in their relationship that was not necessarily 'ideal'.

As noted above we are aware of only one other study that looks at women's decision making in the timing of pregnancy across different age groups which was in a Canadian context (Benzies et al, 2006). These authors found that older mothers claimed that due to societal expectations of what women should attain before motherhood, pregnancies were often later. Whilst this is a pervasive societal discourse on the timing of motherhood, in direct contrast, our analysis demonstrates how women negotiate the timing of pregnancy when not all of these factors are in place, and, in the context of increasing maternal age and the risks of infertility posed by ticking 'biological clocks'. Indeed, as Lee et al (2010) comment, parents are 'risk managers'. In our sample, even pre-parents were risk managers as they were managing a dual risk of either infertility or conceiving at a potentially non-ideal time. Indeed, the narratives from the older mothers very much displayed an awareness of the intensive mothering ideology (Hays, 1996), whereby everything else is in place so that the mother can devote herself entirely to the nurture of her child.

The data presented in this article demonstrates the little acknowledged concern that there are many social and relational circumstances that impact on the timing of pregnancy. Greil et al (2010) noted the way in which social circumstances impact on infertility, and this

article builds on their work by considering the impact that a fear of infertility may have on the timing of pregnancy.

We argue that the current risk discourses around decreasing fertility are problematic and, as is the case here, can have profound implications on women's decision making regarding the timing of their pregnancies; effectively 'scaring' women into making decisions before they feel ready. On the other hand, we recognise that without such messages, women may unknowingly risk the chance to become a mother by 'delaying' pregnancy past the point where they are no longer able to have children. As such, there is a real tension inherent in informing women of the complications they may face, whilst trying not to persuade them into making decisions they do not feel ready to make, against a societal ideology of intensive mothering (Hays, 1996).

Taking into consideration the impact this message has on women's timing of pregnancy, we would question some of the assumptions that surround it. Firstly, that 'delayed' parenting tends to be framed purely as a women's concern, not a concern for both parents. This is of particular interest given a number of studies which report the impact of the age of *both* parents on fertility levels (de La Rochebrochard & Thonneau, 2003; Dunson et al, 2002). Secondly, it is assumed that all women are able to plan for their pregnancies and *choose* to become pregnant at a time when the risks are lower as well as having all of the pre-requisites for 'ideal parenting' in place. We would argue that messages regarding the risks of decreasing fertility with age, need to be broken down and clarified, and considered alongside wider and potentially conflicting social norms, which, for example, define the 'right situation' in which to parent and individualistic values which encourage women to 'have it all'. These 'choices' are often in conflict with one another. If women are to be in the right relationship, financially solvent and established in their career, then it may be hard to balance these 'right time' factors with the biological concerns of increasing infertility. For many women, delaying motherhood might be seen as the most

sensible way of pursuing both career and family. Whilst all of these societal concerns are able to co-exist, the tensions inherent need to be explored and questioned.

Providing women with clearer information about the multifaceted nature of fertility might further assist them in negotiating the timing of their pregnancies in relation to their personal circumstances. At present, the prevailing discourse of the increase in fertility complications with age, which is objectified by the concept of the ticking 'biological clock' provides a basis that is far too simplistic for women to be basing life-changing decisions, such as the timing of pregnancy, on.

Conclusion

Given the small and demographically homogenous nature of the sample of participants used in this study, we acknowledge we are unable to make generalisations about the experiences of all women negotiating the timing of motherhood in the face of the 'risks' of infertility, however our analysis makes some important contributions. Significantly, the analysis demonstrates the ways in which the social and personal circumstances surrounding the 'right' time for motherhood may collide with the 'biologically optimal' window during which it is considered safest – least 'risky' – to conceive. Further, we demonstrate the impact of prevailing 'risk discourses' and the effects of risk categorisation upon women's subjectivities and decision-making regarding the timing of motherhood. This is an issue that requires closer attention when information around health, age and fertility is communicated.

References

- Abma, J.C., Chandra, A., Mosher, W.D., Peterson, L.S., Piccinino, L.J. (1997). Fertility, family planning and women's health: Estimates from the National Survey of family growth. *Vital health statistics*, 23, 1-14.
- Alaszewski, A. & Burgess, A. (2007). Editorial. Risk time and reason. *Health, risk and society*, 9, 349-358.
- Andersen, A. N., Wohlfahrt, J., Christens, P., Olsen, J., & Melbye, M. (2000) Maternal age and fetal loss: population based register linkage study, *British medical journal*, (320) 1708-1712.
- Arendell, T. (2000). Conceiving and investigating motherhood: The decade's scholarship. *Journal of marriage and the family*, 62, 1192-1207.
- Barkan, S. E. & Bracken, M. B. (1987) Delayed childbearing: No evidence for increased risk of low birth weight and preterm delivery. *American journal of epidemiology*, 125, 101-109.
- Beck, Ulrich (1992) *Risk society*, Sage, London.
- Beets, G., Schippers, J., & te Velde, E. R. (2011) (eds) *The future of motherhood in Western societies: Late fertility and its consequences*. New York: Springer.
- Benzies, K., Tough, S., Tofflemire, K., Frick, C., Faber, A., & Newburn-Cook, C. (2006) Factors influencing women's decisions about timing of motherhood. *Journal of obstetric, gynecologic, and neonatal Nursing*, 35, 625-633.
- Berryman, J. C., & Windridge, K. (1991). Having a baby after 40: A preliminary investigation of women's experience of pregnancy. *Journal of Reproductive and Infant Psychology*, 9, 3- 18.
- Bewley, S., Davies, M. & Braude, P. (2005) 'Which career first?' *British medical journal*, 331, no. 7517, 588--589.
- Brian, K. (2011). Managing expectations and achieving realism: the individual journey from

hope to closure. In G. Beets, J. Schippers, & E. R. te Velde (Eds.), *The Future of Motherhood in Western Societies: Late Fertility and its Consequences* (pp. 331-339). New York: Springer.

Budds, K., Locke, A., Burr, V. (2013). Media analysis of older mothers. *Feminist media studies*, 13, 132-147.

Burgess, A. (2006). The making of the risk-centred society and the limits of social risk research. *Health, risk & society*, 8, 329-342.

Cahill, M. (2000). Male appropriation and medicalization of childbirth: An historical analysis. *Journal of advanced nursing*, 33, 334-42.

Carolan, M. (2005) "Doing it properly": The experience of first mothering over 35 years, *Healthcare for women international*, 26, 764--787.

Cowan, C. P. & Cowan, P. A. (1992). *When partners become parents: The big life change for couples*. New York: Harper Collins.

Crawford, R. (2006). Health as a meaningful social practice. *Health: an interdisciplinary journal for the social study of health, illness and medicine*, 10, 401-420.

de La Rochebrochard, E., & Thonneau, P. (2003). Paternal age \geq 40 years: An important risk factor for infertility. *American journal of obstetrics and gynecology*, 189, 901-905.

Department of Health (2012). *Abortion Statistics, England and Wales: 2011*. Retrieved April 25, 2013, from <http://transparency.dh.gov.uk/category/statistics/abortion>

Dunson, D. B., Colombo, B., & Baird, D. D. (2002) Changes with age in the level and duration of fertility in the menstrual cycle. *Human reproduction*, 17, 1399-1403

- Family Planning Association (2010). *Conceivable? – Unplanned pregnancies in the over 35s. Contraceptive awareness week 2010*. Available at:
<http://www.fpa.org.uk/campaignsandadvocacy/contraceptiveawarenessweek/conceivable>.
- Foucault, M. (1991) 'Governmentality', in G. Burchell, C. Gordon & P. Miller (Eds). *The Foucault effect: Studies in governmentality*. Harvester Wheatsheaf, Hemel Hempstead, pp. 87-104.
- Friese, C. Becker, G., & Nachtigall, R.D. (2006) Rethinking the biological clock: Eleventh-hour moms, miracle moms and the meanings of age-related infertility. *Social science & medicine*, 63, 1550-1560.
- Gillespie, R. (2000) 'When no means no: Disbelief, disregard and deviance as discourses of voluntary childlessness', *Women's studies international forum*, 23, 223-234.
- Glasier, A. (2007) Pregnancy in women over 45: should this be encouraged? *Menopause international*, 13, 6-7.
- Green J. (2009). Is it time for the sociology of health to abandon 'risk'? *Health, risk & society*, 11, 493 – 508.
- Greil, A.L. (1997). Infertility and psychological distress: A critical review of the literature. *Social science and medicine*, 45, 1679-1704.
- Greil, A.L., Slauson-Blevins, K. & McQuillan, J. (2010). The experience of infertility: a review of recent literature. *Sociology of health and illness*, 32, 140-162.
- Gross, H. and Pattison, H. (2006). *Sanctioning pregnancy*. London: Routledge.
- Hammarberg, K., & Clarke, V. E. (2005). Reasons for delaying childbearing. *Australian family physician*, 34, 187-189.
- Hanson, B. (2003) Questioning the construction of maternal age as a fertility problem. *Health care for women international*, 24, 166-176.

- Harker, L., & Thorpe, K. (1992) "The last egg in the basket?" Elderly primiparity – a review of findings. *Birth*, 19, 23-30.
- Hays, S. (1996). *The cultural contradictions of motherhood*. New Hale: Yale University Press.
- Heffner, L. J. (2004) Advanced maternal age – how old is too old? New England journal of medicine, 351, 1927-1929.
- Heyman, B. (2010a). Time and health risks. In B. Heyman, M.Shaw, A. Alaszewski & M. Titterton (eds.) *Risk, safety, and clinical practice*. Oxford: Oxford University Press, pp. 107-122.
- Heyman, B. (2010b). The concept of risk. In B. Heyman, M.Shaw, A. Alaszewski & M. Titterton (eds.) *Risk, safety, and clinical practice*. Oxford: Oxford University Press, pp. 1-35
- Heyman, B. (2010c). The social construction of health risks. In B. Heyman, M.Shaw, A. Alaszewski & M. Titterton (eds.) *Risk, safety, and clinical practice*. Oxford: Oxford University Press, pp. 37-58.
- Heyman, B. (2010d). Health risks and probabilistic reasoning. In B. Heyman, M.Shaw, A. Alaszewski & M. Titterton (eds.) *Risk, safety, and clinical practice*. Oxford: Oxford University Press, pp. 85-106.
- Heyman, B. & Henriksen, M. (2001) *Risk, age and pregnancy*. Basingstoke: Palgrave.
- Kline, W. (2010). *Bodies of knowledge: Sexuality, reproduction and women's health in the second wave*. Chicago: University of Chicago Press.
- Kringeland, T., & Möller, A. (2006) Risk and security in childbirth. *Journal of psychosomatic obstetrics & gynecology*, 27, 185-191.
- Lee, E., Macvarish, J. & Bristow, J. (2010). Risk, health and parenting culture. *Health, risk and society*, 12, 293-300.
- Letherby, G. (1999). Other than mother and mothers as others: The experience of

motherhood and non-motherhood in relation to 'infertility' and 'involuntary childlessness. *Women's studies international forum*, 22, 359--372.

Lippman, A. (1999). Choice as a risk to women's health. *Health, risk and society*, 1, 281-291.

Lupton, D. (1993). Risk as Moral Danger. *International Journal of Health Services*, 23, 425-35.

Lupton, D. (1995). *The imperative of health: Public health and the regulated body*. London: Sage.

Lupton, D. (1999). *Risk*. London: Routledge.

McIntosh, M. (1996) Social anxieties about lone motherhood and ideologies of the family: two sides of the same coin. In E. B. Silva (ed.) *Good enough mothering? Feminist perspectives on lone motherhood*, London: Routledge, pp. 148-156.

Nelson, A. M. (2004) A qualitative study of older first-time mothering in the first year. *Journal of pediatric health care*, 18, 284-291.

Nwandison, M. & Bewley, S. (2006) 'What is the right age to reproduce?' *Fetal and Maternal Medicine Review*, vol. 17, 185--204.

Nybo Andersen, A. N., Wohlfahrt, J., Christens, P., Olsen, J., & Melbye, M. (2000). Maternal age and fetal loss: population based register linkage study, *British medical journal*, 320, 1708-1712.

Office for National Statistics (2009) *Birth statistics 2008 Series FM1 No.37*, [online] Available at: <http://www.statistics.gov.uk/statbase>.

Office for National Statistics (2011). *Birth statistics 2010* <http://www.ons.gov.uk/ons/rel/fertility-analysis/cohort-fertility--england-and-wales/2010/index.html>

- O'Malley, P. (2008). Governmentality and risk. In J.O. Zinn (Ed.). *Social theories of risk and uncertainty: An introduction*. Oxford: Blackwell.
- Phoenix, A. (1996) Social constructions of lone motherhood: A case of competing discourses. In E. B. Silva (ed) *Good enough mothering? Feminist perspectives on lone motherhood*, London: Routledge, pp. 75-90.
- Piette, C., Mouzon, J., Bachelot, A., & Spira, A. (1990). In-vitro fertilization: Influence of women's age on pregnancy rates. *Human reproduction*, 5, 56-59.
- Red (2012). Emotional infertility. *The Red modern motherhood report 2012*. October, pages 287-294.
- Rich, A. (1976). *Of woman born: Motherhood as experience and institution*, London: Virago.
- Russo, N. (1976) 'The motherhood mandate', *Journal of social issues*, 32, 143-153.
- Sachs, L. (1996). Causality, responsibility and blame- core issues in the cultural construction and subtext of prevention. *Sociology of health and illness*, 18, 632-652.
- Sevon, E. (2005). Timing Motherhood: Experiencing and narrating the choice to become a mother. *Feminism and psychology*, 15, 461-482.
- Shaw, R.L. (2011). Women's experiential journey toward voluntary childlessness. *Journal of community & applied social psychology*, 21, 151-163.
- Shaw, R. & Giles, D. (2009) Motherhood on ice? A media framing analysis of older mothers in the UK news. *Psychology & health*, 24, 221-236.
- Skolbekken, J. (1995) The risk epidemic in medical journals. *Social science & medicine*, 40, 291-305.
- Sarangi, S. & Candlin, C. (2003) Categorization and explanation of risk: A discourse analytical perspective. *Health, risk & society*, 5, 115-124.
- Shelton, N., & Johnson, S. (2006). "I think motherhood for me was a bit like a double-edged sword": The narratives of older mothers. *Journal of Community & Applied Social Psychology*, 16, 316-330.

Smajdor, Anna (2009) 'Between fecklessness and selfishness: Is there a biologically optimum time for motherhood?' in F. Simonstein (Ed.) *Reprogen-ethics and the future of gender*, Springer: New York, pp. 105--117.

Te Velde, E. R., & Pearson, P. L. (2002). The variability of reproductive ageing. *Human Reproduction Update*, 8, 141-154

Tough, S., Tofflemire, K., Newburn-Cook, C., Fraser-Lee, N., & Benzies, K. (2004). Increased risks of pregnancy complications and adverse infant outcomes associated with assisted reproduction. *International congress series*, 1271, 376-379.

Tulloch, J. & Lupton, D. (2003). *Risk and everyday life*. London: Sage.

Windridge, K. C., & Berryman, J. C. (1999). Women's experiences of giving birth after 35. *Birth*, 26, 16-23.