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## Abstract

Upon their availability for purchase in the 1970s, home pregnancy testing devices were hailed as a 'revolution' for women's reproductive rights. Some authors however, have described these technologies as further enabling the medicalisation of pregnancy, and as contributing to the devaluing of women's embodied knowledge. The home pregnancy test is one of many technological devices encountered by women experiencing pregnancy in the UK today. Existing literature has described how engagement with medical technologies during pregnancy might address uncertainties experienced at this time, providing women with reassurance and alleviating anxieties. Drawing on interviews with women living in Scotland, this article explores accounts of testing for a first pregnancy, and women's descriptions of the impacts of home pregnancy testing upon experiences of early gestation. Participants engaged with pregnancy tests in varying ways, with uses shaping and shaped by their experiences of early pregnancy more broadly. Particular technical characteristics of the home pregnancy test led many participants to question their interpretation of a positive result, as well as the veracity of the test itself. Rather than addressing the unknowns of early gestation by confirming a suspected pregnancy, a positive result could thus exacerbate uncertainty. Through participants' accounts, this article shows how uncertainty is lived out by users of mundane techno-medical artefacts, and sheds new light on women's experiences of the first trimester of pregnancy.

## Keywords

Qualitative research; Pregnancy; Home pregnancy test; Uncertainty; Technological scripts

## Introduction

When the home pregnancy test was first made available for purchase over-the-counter in the 1970s, many hailed it as a ‘revolution’ for women’s reproductive rights (Leavitt, 2006). Commercial marketing of the test adopted this discourse, portraying these devices as enabling users to be the ‘first to know’ of a pregnancy (Robinson, 2016), and as allowing women to exercise personal choice – either by preparing for a future baby, or for an abortion (Layne, 2009). Some groups aligned with the women’s health movement of the time, including the founders of several women’s health centres in the UK, regarded self-administered pregnancy tests as empowering women, and offered free testing alongside counselling in the 1970s (Olszynko-Gryn, 2017). Leavitt (2006: 317) argues that the endorsement of home pregnancy testing by some women’s health advocates, particularly in the US, contributed to its widespread adoption, and transformation from “novelty to norm” within twenty-five years.

A number of social scientists (e.g. Layne, 2009; Oakley, 1984), however, have criticised home pregnancy tests for facilitating the medicalisation of pregnancy. This reflects the position of those feminist scholars depicting medico-technological intervention more widely as devaluing women’s bodily experiences of gestation (Jordan, 1978; Rothman, 1988), arguing that these have become “submerged” within processes of medical diagnosis and monitoring (Jordan, 1977: 12). These authors assert that in the wake of medical intervention, numeric and visual representations of the pregnant-self have become privileged over embodied knowledge and experience (Jordan, 1978), with women’s bodies rendered objects of the medical gaze (Foucault, 1989). These critiques are frequently associated with obstetric ultrasound, which provides clinicians and others with access to information about the foetus within once

accessible only through women's personal accounts of bodily experience (Draper, 2002; Sandelowski, 1994). The reach of medical authority over pregnancy may be seen to have expanded with the widespread adoption of home pregnancy testing, extending the medical gaze extended beyond the clinic. Indeed, despite being self-administered and used within women's private spaces, the home test translates an assortment of embodied sensations into a binary representation of the presence or absence of a particular hormone, echoing the devices used within clinician-administered interventions. As Layne (2009: 65) describes, though purporting to place medical knowledge into the hands of women themselves, the knowledge produced by the pregnancy test remains "reductionist and universalist", and for many women represents an initial step on a path towards medicalised care (Tone, 2012).

Some have claimed that by transforming the meanings of corporeal knowledge of gestation, technological interventions not only transform the status of women's knowledge of pregnancy, but also their *experiences* of pregnant embodiment (Duden, 1993; 1992; Rothman, 1988). For example, in the wake of hormone detection and imaging technologies it has been argued that initial foetal movements, once held as providing definitive evidence of a pregnancy, are no longer experienced as pivotal. Rather, these have become "a somewhat less important event along a scientifically mediated continuum" (Duden, 1992: 335). The home test may also be seen to reconfigure the temporalities of pregnancy, by designating women as 'pregnant' as early as two weeks following conception. With knowledge of pregnancy now offered to women during the earliest stages of gestation, non-viable, or 'chemical' pregnancies may be discovered and lost, where historically these experiences would likely have been recognised as late menstruation (Han, 2014). Interpreting the availability of home pregnancy tests as of clear benefit only to manufacturers and

retailers, Layne thus argues that the pregnancy test may be seen to disempower women, “by deskilling them, devaluing their self-knowledge, and encouraging them to squander their buying power on frivolous consumer products” (Layne, 2009: 61).

In the UK today, pregnancy tests are readily available to buy from pharmacies, supermarkets and online, and are used by a diverse range of women from a variety of economic and ethnic backgrounds, experiencing both planned and unintended pregnancies (Layne, 2009; National Institutes of Health, 2003b). Contemporary tests detect the hormone human chorionic gonadotrophin (hCG), using absorbent material either enclosed in a plastic case (midstream test), or dipped in a urine sample (pregnancy test ‘strips’). Tests are sold as single units, or in multipacks. Since the mid-2000s, digital midstream pregnancy tests have also been available to purchase over-the-counter (National Institutes of Health, 2003a). Like their predecessors these detect hCG but notably feature a digital display, informing the user that they are either ‘Pregnant’ or ‘Not Pregnant’.

Importantly, models of test purchased over-the-counter are unable to detect hCG produced during the earliest days following a successful conception (Cole, 2009; Haarbarger and Pillay, 2011). For this reason, manufacturers of the most commonly available brands recommended use from the first day of a missed period. Because midstream tests display a result according to the levels of hCG present in urine, the point at which the test is taken during the early stages of pregnancy will impact upon the strength of hormone that can be detected, and the user’s ability to determine a positive result.

## Uncertain pregnancies

The home pregnancy test is frequently positioned as a home diagnostic and monitoring tool. This is reflected not only through its provision in commercial settings alongside other health-related devices, but also in social scientific literature. This work compares the home pregnancy test to other medical technologies that have travelled beyond the clinic, including thermometers and blood-glucose monitoring devices (Childerhose and MacDonald, 2013), and the recently developed home HIV test (Banda, 2015).

Within the last two decades, medical classification and diagnostic work has been delineated as a focus for sociological enquiry (Jutel and Nettleton, 2011). Viewing diagnosis in terms of a process, social scientists have outlined how the labelling of health conditions is accomplished, shaped and re-shaped through interactions between medical professionals, patients, and the institutions in which these are embedded (Gardner et al., 2011; Pickersgill, 2014). Diagnoses may reduce unknowns by providing explanations for symptoms, and in many cases facilitate prognosis and treatment (Jutel, 2011). However, where diagnosis and monitoring are unable to produce anticipated or hoped-for outcomes, such as a definitive proclamation of a health condition, it has been shown that attempts at diagnosis can exacerbate uncertainty for patients and their families (Timmermans and Buchbinder, 2010).

Theorists of science and technology have explored the concept of uncertainty in scientific practice. For example, Star (1985: 391) describes the threat posed by anomalies or ambiguities in scientific research to its mandate to produce “widely accepted truths”. Uncertainty is thus often conceptualised as something to be

managed or eliminated in medical and scientific work (Kerr, 2000). However, recent work has shown that practitioners may also *mobilise* uncertainty in order to reformulate diagnostic categories, rules or conventions (Moreira et al., 2009), or to advance particular explanations for pathology which align with other aspects of practice (Timmermans et al., 2016). Uncertainty may thus be worked upon in medical settings to effect its elimination or production, in both cases serving to innovate new knowledge.

Uncertainty is frequently described in social scientific literature as an aspect of women's experiences of pregnancy. This may be with regards the ontological status of the foetal entity within (Schmied and Lupton, 2001), women's knowledge of foetal development (Rothman, 1988), or engagement with antenatal health advice (Ballantyne et al., 2016). For women interviewed by Harpel (2008: 305), the "uncertain and unknown aspects" of pregnancy, particularly with regards foetal health, were described as generating anxiety. Women featured in social scientific literature thus cite various ways of managing the uncertainties of gestation and childbirth, for example through communication with other pregnant women (Johnson-Young, 2016), and the use of complementary and alternative medicines (Mitchell and McClean, 2014). Biomedical interventions in particular are often positioned as providing certainty in the context of the unpredictability of pregnancy, through engagement with technologies of visualisation such as obstetric ultrasound (Mitchell, 2001), and estimations of foetal wellbeing based on calculations of probabilistic risk (Heyman et al., 2006). These ways of knowing are valued by medical professionals and women themselves, who often describe engagement with medical interventions as

providing reassurance, particularly associated with technologies allowing for visualisation of the foetus (Harpel, 2008; Roberts et al., 2015).

Like other forms of technological artefact, antenatal tests and technologies shape the actions of those who use them. Designers embed particular ‘scripts’ into technical objects, based on judgements about the anticipated motives and behaviours of future users (Akrich, 1992). These influence who is able to access particular technologies, at which times, and how they can be used. In the case of home pregnancy tests, a woman is defined as either pregnant or not pregnant according to the presence of a particular hormone. This technological characteristic shapes the point at which women are advised to use the test, with the test only able to detect the hormone at a point roughly coinciding with implantation: the attachment of the developing embryo to the uterine wall (Wilcox et al., 1999). Whilst the test designates a woman as pregnant according to an understanding of pregnancy as beginning at implantation, in practice definitions of when a pregnancy begins are disputed, both within popular representations of pregnancy, and amongst medical professionals (Chung et al., 2012).

While the manufacturers of over-the-counter tests present the results produced as generating definitive facts about pregnancy, this article, taking analytic cues from the literature above, instead reveals the ways in which this technological artefact can serve to *exacerbate* the uncertainties of pregnancy. In what follows, I present fifteen women’s personal accounts of engagement with pregnancy testing, described during interviews taking place before their twelfth week of gestation. I situate uses of the home pregnancy test within the contemporary experience of pregnancy more widely



for women living in the UK. Participants' uses of the pregnancy test disrupted patterns of use inscribed within the technology, and their accounts demonstrate how several technical aspects of the test contributed to experiences of early pregnancy as uncertain. In charting these experiences, this article contributes to literature highlighting the ways in which engagement with medical devices shapes and is shaped by uncertainty, with a focus on the first trimester of gestation.

## **Methods**

This paper draws from a qualitative longitudinal study exploring women's experiences of pregnancy over the course of gestation. After obtaining university-level ethical approval in November 2012, I conducted semi-structured interviews at three consistent time-points with fifteen women experiencing a first (full-term) pregnancy. The research questions central to my study originally focused on women's experiences of a maternal-foetal 'bond' – a concept used to describe women's emotional attachments towards a developing foetus (Lumley, 1990). However, these core questions widened as the study progressed, because this concept did not resonate with interviewees' accounts of early gestation. Following initial interviews, I amended my interview topic guides to focus on broader experiences of pregnant embodiment and the foetal entity, as shaped by engagement with antenatal care over the course of pregnancy.

To capture shifts in experience, women were interviewed for the first-time prior to their first routine ultrasound scan at 12 weeks gestation. Because many women choose not to share news of their pregnancy with others at this time (Renner et al., 2000; Ross, 2015), I recruited participants online, using anonymous message boards

on popular parenting websites, and the home page of a local pregnancy and parenting charity. Following permission from website administrators, I posted a brief message about the research, contact details, and link to a study website. Posters and leaflets were also distributed in the early phases of the research, but were not a successful recruitment strategy.

Recruitment took place between November 2012 and April 2013, and led to fifteen women participating in the research. All had male partners, degree-level qualifications, and ranged from 26 to 38 years of age. Age data were collected in terms of age-ranges, though individual ages were communicated in several interviews. Though living in Scotland, ten women were born in the UK, two elsewhere in the European Union, two in the United States, and one in North Africa. Importantly, none of the women participating indicated that their pregnancies had been designated as high risk by medical professionals. As such, their accounts provide insight into experiences of ‘ordinary pregnancies’, which historically have been overlooked in social scientific literature (Han, 2013).

Initial interviews with participants took place at between 8 and 12 weeks gestation, and these form the dataset on which this article draws. Two further interviews were conducted at 19-20 weeks pregnant, in the week prior to the second routine scan, and at 34-36 weeks pregnant. This later time-point enabled me to capture experiences of late gestation, without losing participants due to them having given birth (with 37 weeks denoting a ‘full term’ pregnancy (NHS Choices, 2015)). With one exception, a participant who gave birth before 34 weeks, those taking part in the study attended the full set of longitudinal interviews.

Topic guides for the first set of interviews, quotes from which are presented below, explored the circumstances surrounding conception, pregnancy testing, bodily experience, contact with health professionals, and sharing news of the pregnancy. Interviews lasted between 45 and 80 minutes, with reflective notes made immediately afterwards. I transcribed all the interviews, inserting analytic memos throughout. Following the completion of interviews, and with analysis having already begun as data collection progressed, I conducted a modified version of Mauthner and Doucet's (1998) Voice Centred Relational analysis. Attention to the participant's voice is maintained by conducting several readings of each transcript, each concentrating on a different aspect of their narrative, and using these readings to develop a long narrative summary of each woman's experiences. My approach entailed three readings, focusing on (i) women's accounts of the circumstances leading to and surrounding their pregnancy and conception, (ii) their conceptualisations of the entities within, and (iii) the social contexts, including relationships, shaping their pregnancies. To facilitate analysis, I produced timelines to highlight events I interpreted as significant, and a matrix to record recurring concepts and emotions.

The development of a long narrative summary for each participant provided a way to condense the many pages of transcription into a manageable pool of data. This was created by collating reflective notes, timelines and interview summaries together within a narrative description of each participant's pregnancy. To develop this I referred to relevant literature, and identified where women's experiences resonated with those of other participants. This process helped further develop the codes and themes noted during readings. As time and milestones emerged as significant, I

composed my narrative summaries chronologically for each participant (i.e. writing these from conception to late gestation), rather than according to trans-temporal themes such as ‘risk’, ‘medicalisation’, or ‘embodiment’, which all emerged as important aspects of experience. This chronological approach to the data is reflected in the analysis presented below, which draws only on the first set of interviews. Alongside time and milestones, a key theme was uncertainty. This shaped, and was influenced by, key aspects of early pregnancy: experiences of conception, bodily experiences of a possible pregnancy, and women’s engagement with the home pregnancy test(s). These are explored in the remainder of this article.

## **Findings**

All of the women in this research were experiencing pregnancies they described as ‘planned’, and as such were alert to any signs or symptoms that could be interpreted as signalling a pregnancy. This shaped their experience of using pregnancy tests. In turn, pregnancy testing caused some to re-evaluate their bodily symptoms. I explore these issues below, and consider how particular features of the technology itself shaped women’s uses and interpretations of their pregnancy test result(s).

## **Taking the test**

All fifteen participants in this research took at least one pregnancy test. However, the circumstances surrounding this varied. Though manufacturers recommend use of the pregnancy test from the point of an expected or missed period, only four women used the test in this way. Some described suspicions of a pregnancy prior to this point, prompted by slight changes to their bodies, and in some cases emotions. Interviewees found these difficult to articulate. For example, Beth explained:

The week before my period was actually due, I said to [my partner] I'm not, I'm not feeling ill but I'm feeling a bit, I just said to him I have a feeling I might be pregnant... I have to be, I know how I feel, it's different. But I couldn't quite put my finger on what it was. **Beth**, 35-39, 11 weeks pregnant

Nancy also felt that she was pregnant prior to experiencing a missed period:

I had a very sore back, five days before my period was due...I just felt like there was something going on, I don't know how to explain it. Just, I felt there was something odd and different feeling about my lower stomach.

**Nancy**, 25-29, 11 weeks pregnant

For the majority of participants, subtle changes to their embodied experience, or more measurable somatic indicators such as Ingrid's perception of a quickened pulse, were powerful in signalling a *possible* pregnancy. However, these did not provide women with certainty. Indeed, of those interviewees who experienced subtle bodily changes, all proceeded to take a home pregnancy test to address their suspicions. These women expected the test to provide a definitive answer as to whether bodily signs and symptoms indicated a pregnancy. However, several aspects of the technology's mechanism and design meant that for many women, the pregnancy test was unable to provide the confirmation they sought. This was partly because home pregnancy tests are unable to detect the levels of hCG present in the earliest weeks following conception. Participants whose symptoms led them to test prior to an expected period, including Deborah, Caroline and Beth, thus received a negative result. Deborah described that she felt she was "going crazy" and "imagining symptoms" when she

did not receive a positive reading.

Deborah took another pregnancy test nine days later. She explained that this time she took a test to ascertain whether she should avoid alcohol over the Christmas period, in order to protect a possibly present foetus. Caroline described a similar experience. After taking several tests in December due to feeling unusually tired, but receiving negative results, she received a positive result in early January:

I didn't get the, real positive one until...around the second of January...and it said 'one to two weeks' on that one so, it was quite early... Of course [I] had a massive panic about, all the things that I'd done, drinking and everything over Christmas, so I was kind of worried about that.

**Caroline**, 35-39, 8 weeks pregnant.

Caroline and Deborah's experiences show that for some, (re-)testing for pregnancy may be prompted by a desire to mitigate risks. For Caroline and Deborah articulated that a desire to protect the foetus led them to test, even prior to confirmation of its presence. Women's vigilance here, and the anxieties described by Caroline with regards the possibility that she may have unwittingly consumed alcohol whilst pregnant, reflect the intensity of risk discourses experienced by women at this time (Lupton, 1999). During gestation, the expectations placed on women to monitor health-related behaviours are particularly morally charged (Lyerly et al., 2009; Bell et al., 2009), with the focus of advice and surveillance on the foetus within, portrayed in clinical and popular arenas as a precious and vulnerable child (Lupton, 2012). For Caroline, the inability of the pregnancy test to detect a pregnancy in its earliest stages

challenged her efforts to abstain from alcohol, in line with powerful health messages emphasizing the risks posed by alcohol to foetal health (Lowe and Lee, 2010). Her experiences thus led her to describe feelings of “panic” and “worry” on receiving a positive result.

In contrast to Caroline and Deborah, in the face of the disparity between ‘feeling’ pregnant, and the test’s ability to detect a pregnancy, Beth ascribed more credence to her embodied experiences when she initially received a negative result:

Beth: The week before my period was actually due, I said to [my partner]... ‘I have a feeling I might be pregnant...’ I did a test, and it was negative. And uh, he said ‘well there you are’, and I said ‘no, I’m feeling, feeling like my period’s coming’, but it was different...I kind of thought ‘I am’, I have to be, I know how I feel ...

E.R.: So when you, when you got the negative one, what did you think?

Beth: That’s not right. I was disappointed, I felt disappointed, but it was like, um, no that’s not right.

**Beth**, 35-39, 11 weeks pregnant

Beth was adamant that the test was incorrect, and took another the following day. This gave a “faint line” indicating a pregnancy. Far from providing a simple resolution to Beth’s and other women’s suspicions of a pregnancy, the production and interpretation of the pregnancy test result required subtle forms of work from women.

Women were required to decide what type of test and brand to use and on what day they would test, with reference to the date of their expected period. Beyond this, women in this research also described producing and deciphering their test result in collaboration with others. This was most often associated with use of supermarket-own or branded midstream tests, the variety most commonly used by participants. With these tests, the visibility of the line indicating a pregnancy is dependent upon the strength of hCG present, levels of which increase during early pregnancy as it progresses (Haarburger and Pillay, 2011). Beth's experience of a 'faint line' was also described by Caroline and Leila. When conducting initial tests, all three were unsure as to whether a line was present, and if it was, whether this could be interpreted as indicating a pregnancy. In these three cases, women consulted their partners to assist them in their interpretation of the result:

[I] took a test then, and it came back with a very, very faint line, and so I, thought, no, you know, it's not really, I don't think that's really a line. But I spoke to my partner and he was like 'yeah that's definitely a line'. And then I took some more, and then there was nothing on those.

**Caroline**, 35-39, 8 weeks pregnant

Leila and Caroline also turned to the Internet to assist them in interpreting the result given by their pregnancy test, with Leila "Googling pictures of positive pregnancy tests with faint lines". When using midstream tests during the early stages of pregnancy, the presence or absence of a line indicating a pregnancy was therefore a collaborative endeavour, involving reflection from women, their partners, and the experiences of anonymous women accessed online.



## Multiple testing

Women attempted to address the uncertainties provoked by home pregnancy testing by taking multiple tests. These were employed to resolve an ambiguous result, or confirm a positive reading. The use of more than one pregnancy test was described by ten of the fifteen participants in this study. In some cases women turned to a digital test, to clarify a faint result produced by the midstream test. These participants positioned the digital test, described as ‘posh’ and ‘magic’, as superior to the midstream test, with the latter designated by many as ‘cheap’. Following her uncertain positive result, Beth’s partner had encouraged her to purchase a digital test the following day, to clarify the faint result they had initially obtained. For Beth and also Caroline, the digital test provided a more certain assessment of their pregnant status, due to its digital display. Though both tests measure the concentration of hCG in urine, the digital test displays a result in terms of the words ‘Pregnant’ or ‘Not Pregnant’, as opposed to a line varying in accordance with the strength of hormone present. The participants in this study favoured the digital test, due to the minimal amount of interpretation required, which along with its estimation of the number of weeks since conception, added to the certainty of a positive result. As Beth described:

It spells it out for you. It says, you know, pregnant one to two weeks. You see it in black and white...it’s not just you’re trying to go ‘is there a line there?’

**Beth**, 35-39, 11 weeks pregnant

Three participants, having been satisfied that midstream tests had produced a positive result, went on to use digital test to *confirm* that a positive result had been correct.

This was the case for Heather, Leila, and also Ingrid, who took a digital test following what she called a “normal” one, “just to make sure I was right”.

For some, the digital test was seen as superior due to the very nature of the technology, viewed by some as more advanced than other forms of test. When asked why the digital test provided additional surety, Leila explained that “you probably just trust whatever computer magic is inside the test”. Nancy described the digital test as “the Rolls Royce of pregnancy tests”, indicating a hierarchy with regards the perceived validity of different forms of test. This was also articulated by Sinead, who moved from test ‘strips’ (purchased online) to the midstream test. This was at her partner’s request for one “made of plastic”, and from a “reputable place”.

Engagements with different forms of pregnancy test were therefore not only shaped by bodily signs and the circumstances surrounding attempts to conceive, but also by the technology itself: the display of the result, and the perceived quality or reliability of the model used when compared with others.

### **Provisionally pregnant**

We have seen that for these interviewees, obtaining a positive pregnancy test result required (cooperative) interpretation, and was dependent upon women’s perceptions of a test’s reliability. However, even when settling on a positive result, for many women the uncertainties that led them to use a pregnancy test remained unresolved: the firm ‘confirmation’ that participants anticipated was not forthcoming. This lack of resolution was explicitly linked by some respondents to their reluctance to take a successful conception for granted. In the context of the social framing of pregnancy as difficult to achieve for women approaching their mid-thirties (Locke and Budds,

2013), many participants, across age-ranges, had anticipated that conception would not occur for several months. This perception was linked by Heather and Gail to statistics they had obtained, detailing rates of conception by age. As well as anticipating that conception would take time, the majority expected that conception would not be achieved through unprotected intercourse alone. Many framed becoming pregnant as requiring additional effort or work, discussing this in terms of ‘trying’ to conceive. Some examples of the work described by participants included the modification of their and their partner’s diets, or the use of ovulation tests. When discovering that she had become pregnant within just six weeks of ceasing contraception, Gail therefore articulated a sense of disbelief on receiving a positive pregnancy test, relating this to the ease with which she conceived:

There was no period of like, trying and wishing for it or anything like that, it was just, instant, which means it feels a bit like, it’s kind of, not real or too easy or, something.

**Gail**, 35-39, 10 weeks pregnant

Such uncertainties were compounded by an embodied or ‘corporeal’ uncertainty (Nash, 2012). The fluidity and unfamiliarity of bodily changes, coupled with the absence of commonly recognised signs such as a ‘bump’, left many women unable to conclusively link their changing corporeality to a pregnancy. Though many felt nauseas, a commonly recognised symptom of early pregnancy, both Leila and Deborah asserted that this could be attributable to illness. Another possibility, described by Leila and Beth, was that they could be experiencing a “phantom”, or false, pregnancy. More pronounced concerns were raised by Andrea. Having

experienced multiple first-trimester miscarriages prior to our interview, she was very aware of the heightened risk of miscarriage during the first twelve weeks of pregnancy. Andrea worried that she may have suffered a pregnancy loss after having received initial positive test results, or that a miscarriage might still occur. As such, she very much experienced her pregnancy at this time as provisional or ‘tentative’ (Rothman, 1988) , as unable to be confirmed until her pregnancy had progressed beyond this particularly risky period of gestation. Indeed, Andrea used the largest number of pregnancy tests of any participant in this research. On meeting for a first interview, she disclosed that she had used “about thirty” strip tests, saying:

You kind of know if [the pregnancy]’s working because the line gets darker each day... that’s why I kept on doing the test, cos it’s like a reassurance thing.

**Andrea**, 30-34, 9 weeks pregnant

Here, Andrea reconfigures the use and meaning of the test. The pregnancy test, designed to provide confirmation of a pregnancy, had become an instrument of reassurance in the context of her ‘tentative’ pregnancy. Though not representative of all the women in this research, Andrea’s experiences do resonate with those of other participants. One positive pregnancy test was not interpreted by Andrea as sufficient to indicate that she was or would remain pregnant. As such she sought other means of confirmation, which for her not only included multiple pregnancy tests, but also an additional ultrasound scan at 7 weeks gestation.

The uncertainties that remained following an initial positive result, and in some cases following a second or third positive pregnancy test, meant that all participants sought confirmation of their pregnancy from a doctor. This, however, was only provided to six women, with others told that a positive home test was sufficient to commence antenatal care. The absence of a confirmatory test from a health professional contributed to the uncertainty felt by women. Despite being one of the few participants to describe the pregnancy test result as providing her with a clearly positive result, Eve said that a lack of confirmation from a GP had left her in “disbelief”:

I’ve only ever had one pregnancy test, like is that for real?... do a pregnancy test, confirm this for us, cos we’re still in kind of, disbelief that this is all real.

**Eve**, 26-29, 9 weeks pregnant

Leila too, expressed unease that only she herself had tested for a pregnancy. For her, confirmation from a health professional was integral to the acceptance of her pregnant status. Accordingly, she looked to the next antenatal appointment where she believed she would be able to confirm her pregnancy; namely, the first routine ultrasound scan:

You’re kind of in this limbo period until the scan, you don’t really know... [Then] I really do think it’ll all start to click... I’ve got so much to do, *once it’s confirmed*, that everything kicks in to like, second gear... Until the scan there’s no point.

**Leila**, 30-34, 11 weeks pregnant (emphasis added)

The majority of women interviewed for this research therefore did not interpret a positive pregnancy test result alone as providing confirmation of a suspected pregnancy. Instead, in the context of their low expectations regarding the anticipated time it would take to conceive, their experiences of ambiguous bodily changes, and uncertainty with regards their interpretation of the result, a positive pregnancy test was experienced as an(other) indication of a *possible* pregnancy. Participants anticipated a pregnancy would not be confirmed until they had been tested by a medical professional, which for many was not offered. For a minority of women, confirmation would not occur until their twelve week scan, on visualising a foetal presence. For the interviewees in this research, the interactional element of contact with medical professionals was seen as important to obtaining certainty. Indeed, sociological literature has shown how mere rituals of doctor-patient interaction may serve to assuage uncertainty (Bosk 1980). This may be particularly pertinent in pregnancy, where medical knowledge has been shown to be positioned as authoritative, not only amongst medical professionals, but by pregnant women themselves (Browner and Press, 1996; Jordan, 1997).

## **Discussion**

This article has explored women's accounts of engagement with home pregnancy tests, in the context of a first full-term pregnancy. Uncertainties impacted upon women's uses and interpretations of this purportedly diagnostic tool. We have observed that few women used the test as scripted by manufacturers – which advise that tests be used from the day of a missed period.

In contrast to the hormonal definition of pregnancy encapsulated within the pregnancy test, reflecting an understanding of pregnancy as beginning at implantation, many users in this research experienced pregnancy corporeally prior to this point. The majority decided to test in response to subtle and almost imperceptible changes in embodied experience, including fatigue or what some simply described as ‘feeling different’. When obtaining a disparity between tentative suspicions of pregnancy and the pregnancy test result, some women re-evaluated the bodily sensations they had been experiencing. Others, however, privileged these over the test itself. Women’s engagements with pregnancy tests were thus complex, and importantly, shaped and were shaped by bodily experiences of early pregnancy, but also experiences beyond the corporeal. Uncertainty with regards their ability to conceive, and wider discourses of risk with regards the first twelve weeks of pregnancy, contributed to the doubts women described when interpreting bodily signs and sensations. The bodily changes they experienced were ambiguous, and some women noted that these could be attributable to more familiar situations such as illness or fluctuations in hormones. Most importantly, these changes did not (yet) accord with more recognisable and culturally acknowledged signs of pregnancy such as a ‘bump’ (Nash, 2012). We see then that embodied experiences of early pregnancy cannot be understood separately from the emotional and sociocultural contexts in which they were experienced (Bendelow and Williams, 1995). In turn, these embodied uncertainties impacted on their engagement with the pregnancy test, which as we have seen did not provide a definitive result for many participants during the early weeks of gestation. Interactions between embodied experiences and the technology of the test were thus complex, fluid, and intertwined (Markens et al., 2010), with uncertainties surrounding conception, bodily signs, and the future of the pregnancy placing those using the test

in a position of liminality, between being a pregnant and non-pregnant woman. It is important to note that though having the potential to contribute to uncertainty, embodied signs of pregnancy remained significant for the women participating in this research, countering claims that they have been undermined by technological intervention (Duden, 1993; Oakley, 1984; Rothman, 1988). Indeed bodily changes were noticed and reflected on by all, and were cited by the majority of women as the first indication of a possible pregnancy. These changes clearly influenced the ways participants used and interpreted the pregnancy test.

Interviewees' accounts of home testing for a first pregnancy have demonstrated that engagement with the home test was a complex process, requiring interpretive work from women and others. Though prenatal technologies and medical interventions in pregnancy are presented as producing 'authoritative' knowledge of pregnancy (Browner and Press, 1996), and as able to resolve anxieties and uncertainties (Harpel, 2008), in this research, a positive home pregnancy test rarely provided the confirmation of pregnancy sought by participants. In contrast, a positive result could place women in a position of (further) uncertainty. The experiences of my fifteen participants clearly resonate with Rothman's (1988) notion of the 'tentative pregnancy', a term used to describe the experiences of pregnant women undergoing amniocentesis. Women interviewed by Rothman felt unable to fully accept their pregnant status, due to a fear that their pregnancy may end prematurely. These experiences provoked anxiety for women, and were prompted by engagement with medical technologies. More recent work has explored how wider antenatal interventions can exacerbate or even generate unknowns. For example, Burton-Jeangros et al. (2013) describe that on receiving probabilistic information with regard



the risk of foetal abnormality, instead of offering certainty, women undergoing prenatal screening are faced with further decisions, expectations and preoccupations. In more recent research on obstetric ultrasound, women's accounts have described these images as ambiguous, and the foetuses observed as 'uncertain'. Here uncertainty and ambiguity may be regarded as productive, – allowing for multiple considerations of the foetal entity - as a “real baby”, but also as an “uncertain stranger” - and thus multiple forms of maternal-foetal relations (Stephenson et al., 2016: 28).

Whilst the literature above focuses on complex and institutionally mediated prenatal technologies contributing to uncertainty, in this research, similar experiences were prompted by a non-invasive and easily obtainable technology, at a very early stage of pregnancy. The technical characteristics of the home pregnancy test shaped the way women engaged with the device, with some doubting their interpretation of a positive result, and/or the accuracy of the test. It may be said that the opportunity for doubt is embedded within the provision of these tests: the sale of the home pregnancy test in multipacks solidifies an expectation of multiple testing. Perhaps this represents an acknowledgement of the fallibilities of contemporary pregnancy tests, which as we have seen, are reliant on the “skilled actions” of their users to function successfully (Pinch, 1993: 36). Women must engage with the test at a particular point in their menstrual cycle, determine how long to wait for a result, and at what time of the day to test. Despite a heavy dependence on the actions of users, participants in this research were unprepared for the efforts required to produce a result. As a widely recognised and established technology, the work required to effectively use the pregnancy test is black-boxed, its use seeming self-evident (*ibid*). As such, it is perhaps no surprise that participants were keen to test multiple times, to ensure that

they had performed the test, so reliant upon their actions and choices, correctly. Alternatively, we may see the provision of tests in multipacks as aligning with contemporary representations of conception as ‘work’, with repeat pregnancy testing, along with engagement with ovulation tests and fertility cycle monitoring, contributing to the project of ‘trying’ to conceive.

A key element of the uncertainty described by interviewees in this research was the ambiguous display of a positive result within conventional midstream and ‘strip’ tests, the visibility of which varies according to levels of hCG detected. Because of the possibility for ambiguity, the majority of participants did take several tests. Some clarified unclear results with what they deemed to be a ‘superior’ model, or used this to confirm a positive result. Many preferred the digital model, which unequivocally declared those who used them as either ‘Pregnant’ or ‘Not Pregnant’. Nevertheless, even for those accepting a positive result, uncertainties with regard the reality of their pregnancy could persist. For some, this was due to disbelief regarding the ease with which they had conceived, in the face of sociocultural depictions of declining fertility as women approach their mid-thirties, and for others this was associated with the unfamiliarity of their changing bodies. Echoing Gregg (1995: 84), whose work with women testing for pregnancy provoked similarly ambivalent accounts, this article has shown that experiences of pregnancy are “relational, multidimensional and contextual”, and have the potential to shape women’s emotions and engagements with medical interventions in shifting ways over time.

Through discussions of engagement with home pregnancy testing, we have observed that uncertainty was a significant aspect of women’s experiences of early pregnancy,

created through material bodies and technologies entwining with the social contexts of pregnancy in complicated ways (Timmermans and Berg, 2003). However, uncertainty is often overshadowed in academic writing on pregnancy, with literature paying more attention to women's experiences of risk (Lupton, 1999; Lyerly et al., 2009). In their accounts of testing for pregnancy, risk did feature in several interviewees' narratives. This was most notably discussed by Caroline and Deborah, who described their efforts to mitigate risks to their pregnancy by avoiding alcohol. The pregnancy test was a key tool here, informing them of a (possible) pregnancy, and the point at which abstinence should begin. Andrea engaged with pregnancy testing in a novel way, in response to knowledge (and experience) that early pregnancy entailed a heightened risk of miscarriage. However, most women featured in this research engaged with the home pregnancy test in response to ambiguous bodily signs and sensations, which in isolation they felt were insufficient to confirm a pregnancy. Nevertheless, despite acquiring a positive result, many uncertainties remained unresolved. Recent work has begun to (re)emphasise the role of uncertainty in biomedical science (Pickersgill, 2011), and medical practice (Gardner et al., 2015). Existing studies beyond pregnancy have considered how diagnostic and screening technologies, administered to provide certainty, instead produce ambiguity and anxiety for those engaging with them (Gillespie, 2012; Scott et al., 2005). This work, conducted with complex medical interventions, has been extended through this article, which points to how uncertainties may be similarly intensified through engagement with mundane and accessible home technologies. The article has shown how in the context of pregnancy, these experiences were additionally shaped by corporeal signs and sensations. For the women in this research, these elements of experience were intertwined, and transformed the meaning of the home pregnancy

test – a technology designed to confirm a pregnancy, but which instead provoked anxiety, self-doubt, and a need for clarification in collaboration with others.

It is important to note, however, that the uncertainty described by interviewees, and the relation of this to engagements with home pregnancy testing, may not be experienced by all women. For example, several participants in this research had obtained statistics regarding the likelihood of becoming pregnant for women in their age-range, aware of depictions of conception as a ‘risky business’ for women approaching their mid-thirties (Budds et al., 2013). Participants’ interpretations of these figures led them to perceive conception as a difficult task, and when a positive test was obtained following only short period of ‘trying’ to conceive, some women doubted the result. These doubts may not be expressed by those to whom these statistics are not available. Attention to the experiences of women unable to access reproductive advice and care - due to health literacy, socioeconomic circumstances, or healthcare infrastructures, especially those beyond the UK - is required across the social sciences (Coxon, 2014).

Further, the women in this research had as far as possible ‘planned’ their pregnancies, and because of this described being particularly alert to any bodily changes. For those experiencing unanticipated pregnancies, uncertainties regarding the subtle embodied signs of early pregnancy may not be experienced. Indeed, more tangible signals, such as a missed period, seem likely to prompt engagement with pregnancy testing in these cases. Related to this, the stage of gestation at which women encounter the pregnancy test is significant to how women (are able to) engage with the device. In early pregnancy, uncertainties regarding embodied experience, and the viability of the

foetal entity, are particularly pronounced, with these shifting in complex ways as pregnancy progresses (Ross, 2016). The interviewees featured above engaged with pregnancy tests in the very early weeks of gestation. This undoubtedly shaped their experiences in different ways to those engaging with home testing in later pregnancy.

Despite the homogeneity of the contexts surrounding interviewees' uses of home pregnancy tests, which may differ markedly from the circumstances experienced by a more diverse group of women, the encounters with pregnancy tests related by participants in this study do echo those heard in existing research. Many of the first person accounts collected by the US National Institute of Health, and drawn on in research by Childerhose and Macdonald (2013), Layne (2009) and Leavitt (2006), describe similar reflections and engagements with these technologies, provided by women with different ages and relationship status. These include seeking confirmation for "ambiguous" or "unclear" results, feelings of "disbelief", and stories of multiple testing (National Institutes of Health, 2003b). This suggests that there is the potential for commonality in experiences of home pregnancy testing across a wide range of circumstances, which further qualitative research with a more diverse group of women could explore.

## **Conclusion**

This article has considered women's accounts of home testing for a first-time pregnancy. We have observed that women engaged with the pregnancy test in varying and multiple ways, deviating from patterns of use inscribed within its design and marketing. In so doing, women reformulated the abilities and meaning of the home pregnancy test. However, alternate ways of engaging with the device – e.g. by using it

in very early pregnancy, or by recruiting others into the task of interpreting a result - did not always serve women's needs. For the participants in this research, the pregnancy test was not able to definitively indicate a pregnancy, but could instead exacerbate the uncertainties of early gestation.

Uses of and engagement with the home pregnancy test cannot be understood without reference to the contexts in which these women's pregnancies took place. In the UK, pregnancy is conceptualised in medical literature, and by women themselves, as a time of risk. Further, care is characterised by frequent engagements with biomedical institutions and professionals (including physicians, midwives, sonographers) involving the monitoring of foetal entities. This article has emphasised the role of uncertainty within these experiences, and how this shapes women's uses and understandings of an everyday technology. Attention to these seemingly mundane experiences, and to the emotional-corporeal ensembles these effect, has provided new insights into women's experiences of pregnancy, and for the social sciences more widely.

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- Akrich, M. (1992) 'The De-description of Technical Objects', in Bijker, W. & Law, J. (eds.) *Shaping Technology/Building Society*. Massachusetts: Massachusetts University Press, 205-224.
- Ballantyne, A., Gavaghan, C., McMillan, J. & Pullon, S. (2016) 'Pregnancy and the Culture of Extreme Risk Aversion', *The American Journal of Bioethics* 16 (2): 21-23.
- Banda, J. (2015) 'Rapid Home HIV Testing: Risk and the Moral Imperatives of Biological Citizenship', *Body & Society* 21 (4): 24-47.
- Bell, K., McNaughton, D. & Salmon, A. (2009) 'Medicine, morality and mothering: public health discourses on foetal alcohol exposure, smoking around children and childhood overnutrition', *Critical Public Health* 19 (2): 155-170.
- Bendelow, G. A. & Williams, S. J. (1995) 'Transcending the dualisms: towards a sociology of pain', *Sociology of Health & Illness* 17 (2): 139-165.
- Bosk, C. L. (1980) 'Occupational Rituals in Patient Management', *New England Journal of Medicine* 303 (2): 71-76.
- Browner, C. H. & Press, N. (1996) 'The Production of Authoritative Knowledge in American Prenatal Care', *Medical Anthropology Quarterly* 10 (2): 141-156.
- Budds, K., Locke, A. & Burr, V. (2013) "'Risky Business" Constructing the "choice" to "delay" motherhood in the British press', *Feminist Media Studies* 13 (1): 132-147.
- Burton-Jeangros, C., Cavalli, S., Gouilhers, S. & Hammer, R. (2013) 'Between tolerable uncertainty and unacceptable risks: how health professionals and pregnant women think about the probabilities generated by prenatal screening', *Health, Risk & Society* 15 (2): 144-161.
- Childerhose, J. E. & MacDonald, M. E. (2013) 'Health consumption as work: The home pregnancy test as a domesticated health tool', *Social Science & Medicine* 86: 1 - 8.
- Chung, G. S., Lawrence, R. E., Rasinski, K. A., Yoon, J. D. & Curlin, F. A. (2012) 'Obstetrician-gynecologists' beliefs about when pregnancy begins', *American Journal of Obstetrics and Gynecology* 206 (2): 132.e1-132.e7.
- Cole, L. (2009) 'New discoveries on the biology and detection of human chorionic gonadotropin', *Reproductive Biology and Endocrinology* 7 (8): 1-37.
- Coxon, K. (2014) 'Risk in pregnancy and birth: are we talking to ourselves?', *Health, Risk & Society* 16 (6): 481-493.
- Draper, J. (2002) 'It was a real good show': the ultrasound scan, fathers and the power of visual knowledge', *Sociology of Health & Illness* 24 (6): 771-795.
- Duden, B. (1992) 'Quick with child: An experience that has lost its status', *Technology in Society* 14 (3): 335-344.
- Duden, B. (1993) *Disembodying women: perspectives on pregnancy and the unborn*. Cambridge, Mass. ; London: Harvard University Press.
- Foucault, M. (1989) *The birth of the clinic: an archaeology of medical perception*. London: Routledge.

- Gardner, J., Dew, K., Stubbe, M., Dowell, T. & Macdonald, L. (2011) 'Patchwork diagnoses: The production of coherence, uncertainty, and manageable bodies', *Social Science & Medicine* 73 (6): 843-850.
- Gardner, J., Samuel, G. & Williams, C. (2015) 'Sociology of Low Expectations: Recalibration as Innovation Work in Biomedicine', *Science, Technology & Human Values* 40 (6): 998-1021.
- Gillespie, C. (2012) 'The experience of risk as 'measured vulnerability': health screening and lay uses of numerical risk', *Sociology of Health & Illness* 34 (2): 194-207.
- Gregg, R. (1995) *Pregnancy in a high-tech age: paradoxes of choice*. New York; London: New York University Press.
- Haarburger, D. & Pillay, T. S. (2011) 'Historical perspectives in diagnostic clinical pathology: development of the pregnancy test', *J Clin Pathol* 64 (6): 546-8.
- Han, S. (2013) *Pregnancy in Practice: Expectation and Experience in the Contemporary US*. New York: Berghahn Books.
- Han, S. (2014) 'The Chemical Pregnancy: Technology, Mothering, and the Making of a Reproductive Experience', *Journal of the Motherhood Initiative for Research and Community Involvement* 5 (2): 42-53.
- Harpel, T. S. (2008) 'Fear of the unknown: ultrasound and anxiety about fetal health', *health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 12 (3): 295-312.
- Heyman, B., Hundt, G., Sandall, J., Spencer, K., Williams, C., Grellier, R. & Pitson, L. (2006) 'On being at higher risk: A qualitative study of prenatal screening for chromosomal anomalies', *Social Science & Medicine* 62 (10): 2360-2372.
- Johnson-Young, E. A. (2016) 'Help Me Understand What I Can Expect While I'm Expecting: What Women in a Prenatal Yoga Class Communicate About Body Image, Fitness, and Health', *Qualitative Research Reports in Communication* 17 (1): 85-92.
- Jordan, B. (1977) 'Part one: The self-diagnosis of early pregnancy: An investigation of lay competence', *Medical Anthropology: Cross-cultural studies in health and illness* 1 (2): 1-38.
- Jordan, B. (1978) *Birth in four cultures : a crosscultural investigation of childbirth in Yucatan, Holland, Sweden, and the United States*. Montreal ; St. Albans, Vt.: Eden Press Women's Publications.
- Jordan, B. (1997) 'Authoritative Knowledge and its Construction', in Davis-Floyd, R. E. & Sargent, C. F. (eds.) *Childbirth and Authoritative Knowledge: Cross-Cultural Perspectives*. Berkeley ; London: University of California Press, 55-79.
- Jutel, A. (2011) *Putting a name to it : diagnosis in contemporary society*. Baltimore: The Johns Hopkins University Press.
- Jutel, A. & Nettleton, S. (2011) 'Towards a sociology of diagnosis: Reflections and opportunities', *Social Science & Medicine* 73 (6): 793-800.
- Kerr, A. (2000) '(Re)Constructing Genetic Disease: The Clinical Continuum between Cystic Fibrosis and Male Infertility', *Social Studies of Science* 30 (6): 847-894.
- Layne, L. L. (2009) 'The Home Pregnancy Test: A Feminist Technology?', *Women's Studies Quarterly* 37 (1/2): 61-79.



- Leavitt, S. (2006) "'A private little revolution': the home pregnancy test in American culture', *Bulletin of the History of Medicine* 80 (2): 317-345.
- Locke, A. & Budds, K. (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 & Society* 15 (6-07): 525-542.
- Lowe, P. K. & Lee, E. J. (2010) 'Advocating alcohol abstinence to pregnant women: Some observations about British policy', *Health, Risk & Society* 12 (4): 301-311.
- Lumley, J. (1990) 'Through a Glass Darkly: Ultrasound and Prenatal Bonding', *Birth* 17 (4): 214-217.
- Lupton, D. (1999) 'Risk and the Ontology of Pregnant Embodiment', in Lupton, D. (ed.) *Risk and sociocultural theory: new directions and perspectives*. Cambridge: Cambridge University Press, 59-85.
- Lupton, D. (2012) 'Precious cargo': foetal subjects, risk and reproductive citizenship', *Critical Public Health* 22 (3): 329-340.
- Lyerly, A. D., Mitchell, L. M., Armstrong, E. M., Harris, L. H., Kukla, R., Kuppermann, M. & Little, M. O. (2009) 'Risk and the Pregnant Body', *Hastings Center Report* 39 (6): 34-42.
- Markens, S., Browner, C. H. & Preloran, H. (2010) 'Interrogating the dynamics between power, knowledge and pregnant bodies in amniocentesis decision making', *Sociology of Health & Illness* 32 (1): 37-56.
- Mauthner, N. & Doucet, A. (1998) 'Reflections on a Voice-centred Relational Method: Analysing Maternal and Domestic Voices', in Ribbens, J. & Edwards, R. (eds.) *Feminist Dilemmas in Qualitative Research*. London: Sage Publications, 119-146.
- Mitchell, L. M. (2001) *Baby's first picture: Ultrasound and the politics of fetal subjects*. Toronto: University of Toronto Press.
- Mitchell, M. & McClean, S. (2014) 'Pregnancy, risk perception and use of complementary and alternative medicine', *Health, Risk & Society* 16 (1): 101-116.
- Moreira, T., May, C. & Bond, J. (2009) 'Regulatory Objectivity in Action: Mild Cognitive Impairment and the Collective Production of Uncertainty', *Social Studies of Science* 39 (5): 665-690.
- National Institutes of Health. (2003a) *A Thin Blue Line: The History of the Pregnancy Test Kit - A Timeline of Pregnancy Testing* [Online]. Available: <https://history.nih.gov/exhibits/thinblueline/timeline.html> [Accessed 15th November 2016].
- National Institutes of Health. (2003b) *A Thin Blue Line: The History of the Pregnancy Test Kit - Your Stories* [Online]. Available: <http://echo.gmu.edu/nih/responses.php> [Accessed 27th May 2017].
- NHS Choices. (2015) *You and your baby at 37-40 weeks pregnant* [Online]. Available: <http://www.nhs.uk/conditions/pregnancy-and-baby/pages/pregnancy-weeks-37-38-39-40.aspx> [Accessed 22nd June 2016].
- Oakley, A. (1984) *The Captured Womb: A history of the medical care of pregnant women*. Oxford: Basil Blackwell Ltd.
- Olszynko-Gryn, J. (2017) 'The feminist appropriation of pregnancy testing in 1970s Britain', *Women's History Review*: 1-26.

- Pickersgill, M. (2011) 'Ordering Disorder: Knowledge Production and Uncertainty in Neuroscience Research', *Science as Culture* 20 (1): 71-87.
- Pickersgill, M. (2014) 'The Endurance of Uncertainty: Antisociality and Ontological Anarchy in British Psychiatry, 1950–2010', *Science in Context* 27 (1): 143-175.
- Pinch, T. (1993) "' Testing-One, Two, Three... Testing!": Toward a Sociology of Testing', *Science, Technology & Human Values* 18 (1): 25-41.
- Renner, C. H., Verdekal, S., Brier, S. & Fallucca, G. (2000) 'The Meaning of Miscarriage to Others: Is it an Unrecognized Loss?', *Journal of Personal and Interpersonal Loss* 5 (1): 65-76.
- Roberts, J., Griffiths, F. E., Verran, A. & Ayre, C. (2015) 'Why do women seek ultrasound scans from commercial providers during pregnancy?', *Sociology of Health & Illness* 37 (4): 594-609.
- Robinson, J. H. (2016) 'Bringing the pregnancy test home from the hospital', *Social Studies of Science* 46 (5): 649-674.
- Ross, E. (2016) 'Locating the foetal subject: Uncertain entities and foetal viability in accounts of first-time pregnancy', *Women's Studies International Forum* 58: 58-67.
- Ross, E. J. (2015) 'I think it's self-preservation': risk perception and secrecy in early pregnancy', *Health, Risk & Society* 17 (5-6): 329-348.
- Rothman, B. K. (1988) *The tentative pregnancy: prenatal diagnosis and the future of motherhood*. London: Pandora.
- Sandelowski, M. (1994) 'Separate but less unequal: fetal ultrasonography and the transformation of expectant mother/fatherhood', *Gender & Society* 8 (2): 230-245.
- Schmied, V. & Lupton, D. (2001) 'The externality of the inside: body images of pregnancy', *Nursing Inquiry* 8 (1): 32-40.
- Scott, S., Prior, L., Wood, F. & Gray, J. (2005) 'Repositioning the patient: the implications of being 'at risk'', *Social Science & Medicine* 60 (8): 1869 - 1879.
- Star, S. L. (1985) 'Scientific Work and Uncertainty', *Social Studies of Science* 15 (3): 391-427.
- Stephenson, N., McLeod, K. & Mills, C. (2016) 'ambiguous encounters, uncertain foetuses: women's experiences of obstetric ultrasound', *Feminist Review* 113 (1): 17-33.
- Timmermans, S. & Berg, M. (2003) 'The practice of medical technology', *Sociology of Health & Illness* 25 (3): 97-114.
- Timmermans, S. & Buchbinder, M. (2010) 'Patients-in-Waiting: Living between Sickness and Health in the Genomics Era', *Journal of Health and Social Behavior* 51 (4): 408-423.
- Timmermans, S., Tietbohl, C. & Skaperdas, E. (2016) 'Narrating uncertainty: Variants of uncertain significance (VUS) in clinical exome sequencing', *BioSocieties*: 1-20.
- Tone, A. (2012) 'Medicalizing Reproduction: The Pill and Home Pregnancy Tests', *The Journal of Sex Research* 49 (4): 319-327.
- Wilcox, A. J., Baird, D. D. & Weinberg, C. R. (1999) 'Time of Implantation of the Conceptus and Loss of Pregnancy', *New England Journal of Medicine* 340 (23): 1796-1799.