



## Improving recruitment to clinical trials during pregnancy: A mixed methods investigation



Sofia Strömmer<sup>a,b,\*</sup>, Wendy Lawrence<sup>a,b</sup>, Taylor Rose<sup>a</sup>, Christina Vogel<sup>a,b</sup>, Daniella Watson<sup>a</sup>, Joanne N. Botell<sup>a</sup>, Nicholas C. Harvey<sup>a,b</sup>, Cyrus Cooper<sup>a,c</sup>, Hazel Inskip<sup>a,b</sup>, Janis Baird<sup>a,b</sup>, Mary Barker<sup>a,b</sup>

<sup>a</sup> MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton General Hospital, Southampton SO16 6YD, UK

<sup>b</sup> NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, UK

<sup>c</sup> NIHR Oxford Musculoskeletal Biomedical Research Unit, University of Oxford, UK

### ARTICLE INFO

#### Keywords:

Clinical trial  
Qualitative  
Pregnancy  
Recruitment  
Thematic analysis  
Mixed methods  
Questionnaire

### ABSTRACT

**Objective:** To identify reasons underlying women's refusal to participate in a pregnancy trial and to identify ways of increasing recruitment.

**Design:** Mixed methods study using a questionnaire and qualitative interviews.

**Sample:** A questionnaire asking them to indicate reasons for their decision was completed by 296 pregnant women who declined to participate in one of two trials of nutritional supplementation in a large teaching hospital in southern England. Qualitative interview data were collected from two samples of pregnant women: 1) 30 women who declined to participate in a trial but completed the questionnaire; and 2) 44 women who participated in a trial.

**Results:** Questionnaire data from pregnant women who declined to participate suggested the major barriers to participation were study requirements, including taking study medication, having a bone scan or blood tests, or being too busy. Thematic analysis of interview data identified differences in self-efficacy and levels of trust in medical research between participants and decliners. Participants believed that the research would cause no harm, while decliners felt they or their unborn child would be at risk. When faced with potential obstacles, participants found ways around them while decliners felt they were insurmountable.

**Conclusions:** Recruitment methods for pregnancy trials should focus on building women's trust in the trial, and on enhancing women's self-efficacy so they feel able to meet trial requirements. Suggestions for building trust include investing time in open, honest discussion of the risks and benefits of participation, improving visibility of the research team, testimonials from previous participants and advertising study safety and ethical conduct. Self-efficacy can be enhanced by training research staff in empowering styles of communication enabling women to feel heard and supported to problem-solve. These strategies could be implemented relatively easily into pregnancy trial protocols, and their effectiveness tested through their impact on recruitment rates.

### 1. Introduction

It is widely accepted that randomised controlled trials provide the best evidence of the effects of treatments and programmes (Abel and Koch, 1999; Gul and Ali, 2010; Rick et al., 2014). Despite trial evidence being considered the gold standard, trials face significant challenges in recruiting sufficient numbers of participants, which can lead to unrepresentative samples and jeopardise studies' external validity (Fisher et al., 2012; Treweek et al., 2010). The struggle to reach target sample size can also affect study costs and staff morale when recruitment is slow and studies need to be extended (McDonald et al., 2006; Rengerink

et al., 2010; Tooher et al., 2008; Williams et al., 2014). In a review of recruitment rates in 122 clinical trials spanning 18 clinical areas, only 31% reached their target sample size within the intended time (Campbell et al., 2007). Over half of the trials (54%) required an extension, and more than a third revised their recruitment target over the course of the trial, most to reduce target sample size.

The main barriers to taking part identified in the literature include: treatment preference such as not wanting to change medication, to take a placebo, or take any medication; lack of interest in research; distrust of researchers; additional demands of the study such as extra procedures and appointments which may cause discomfort; and difficulties

\* Corresponding author. MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton General Hospital, Southampton SO16 6YD, UK.  
E-mail address: [ss3@mrc.soton.ac.uk](mailto:ss3@mrc.soton.ac.uk) (S. Strömmer).

with travel to the trial site (Coday et al., 2005; Ross et al., 1999; Stead et al., 2005). The randomisation aspect of clinical trials seems particularly to cause concern; participants feel they may be missing out on valuable effects of the treatment and dislike the lack of control over their assignment to either group (Gross and Fogg, 2001).

In addition to this uncertainty, there are requirements associated with any study which may represent barriers to participation. Interventions may interfere with other commitments such as work, childcare, or domestic duties. Some populations, such as city-dwelling women with low socioeconomic status are challenging to recruit because they can have difficulties with transportation, inflexible work schedules, childcare considerations, unstable housing, difficult personal circumstances, and distrust of medical institutions and research (El-Khorazaty et al., 2007). Though hard to recruit, these are often also the populations who most need support and interventions (Baird et al., 2014; Lawrence et al., 2012).

The decision to participate is not only determined by the presence or absence of barriers, but also the perceived benefits of taking part. The most commonly given motivation for deciding to participate is the potential benefit to others (Hollada et al., 2014; Meshaka et al., 2017). Other reported motivations include: free health services such as scans or imaging (Hollada et al., 2014), trusting and wanting to please the physician (Jenkins and Fallowfield., 2000), and reasons such as endorsement from family members and trust in the medical institution (ECRI, 2002).

It has even been suggested that increasingly accessible health care information and consumer empowerment have changed the relationship of the public with research, such that people now evaluate research studies from a consumer perspective (Gross and Fogg, 2001). It is argued that problems with recruitment arise because studies are designed primarily to fit theory and budget, as opposed to the needs of the target population. To improve recruitment and consequently the validity of clinical trials, research must therefore become more participant-centred (Gross and Fogg, 2001). Such research would involve greater input from patients and public, and co-creation of research projects to ensure that participant views and experiences are acknowledged and incorporated into trial design.

Few studies examining reasons for participating in clinical trials have involved pregnant women; most involve patients with cancer, cardiovascular or respiratory diseases. The type of trial may have a considerable impact on recruitment rates. Trials such as cancer and drug trials that address clinically important questions at a timely point, have most relevance to potential participants and therefore most recruitment success (Campbell et al., 2007). Even though pregnancy trials may also address such questions, pregnant women are a unique group in that they are considering a second participant, the unborn baby, when making their decision to participate (Mohanna and Tuna, 1999; Rengerink et al., 2015). Clinical trials involving pregnant women therefore face specific enrolment challenges, and pregnancy trials often require large sample sizes to detect significant differences in clinical outcomes for the mother or baby (Tooher et al., 2008). Recruitment rates for pregnancy trials are consistently low with only around 30% of eligible women typically choosing to participate, and recruitment often slower than expected (Kinnunen et al., 2008; Poston et al., 2013, 2015).

Another issue in increasing recruitment to trials is that our understanding about what motivates people to participate or not comes mainly from those who *do* participate. The reasons women most commonly give for participating in trials whilst pregnant are potential benefits to them and/or their babies (Kenyon et al., 2006; Lyerly et al., 2012; Rodger et al., 2003; Smyth et al., 2012), contribution to scientific research and improving maternity care (Baker et al., 2005; Meshaka et al., 2017; Rodger et al., 2003), and the opportunity to receive more than standard care (Baker et al., 2005).

The two published studies of non-participants' views on participating in clinical trials during pregnancy provide some suggestions as to why women might decline. Amongst these are approaching women by

letter rather than in person, partner's opinion of potential risks, a history of pregnancy complications, and anxiety about interfering with the normal course of pregnancy, and uncertainty about the safety or effectiveness of the trial (Mohanna and Tuna, 1999; Rengerink et al., 2015). Yet, both these studies were small and relied solely on qualitative data and reported only the reasons women gave without deeper exploration of issues that might underlie those reasons. Mixed methods evaluation studies are growing in significance. A summative approach captures prevalence and frequency of views (Pope and Campbell, 2001; Doshani et al., 2009). Qualitative procedures capture expressive information not conveyed in quantitative data about beliefs, values, feelings, and motivations that underlie behaviours, and is particularly useful in areas where little research exists (Pope and Campbell, 2001; Doshani et al., 2009).

This study therefore used mixed methods to answer two research questions:

- 1) What underlies women's decisions about whether or not to participate in clinical trials during pregnancy?
- 2) What can we learn from these women's experiences to increase recruitment to clinical trials in pregnancy?

## 2. Method

### 2.1. Setting

This study was carried out in a large teaching hospital in the south of England between 2014 and 2016 and recruited from amongst women who had participated or declined to participate in two clinical trials (Baird et al., 2016; Cooper et al., 2016). MATernal VItamin D Osteoporosis Study (MAVIDOS) was a randomised controlled trial (RCT) of vitamin D supplementation in pregnancy. The Southampton PRenancy Intervention for the Next Generation (SPRING) was an RCT of vitamin D plus nurse support for improving women's diet and body composition. Women were recruited for this study from both trials since SPRING is effectively an extension of MAVIDOS. Both trials required women to take daily capsules, attend two extra ultrasound scan appointments during pregnancy and for the baby just after birth to have a DXA scan: a bone mineral density scan with a much lower level of radiation than standard X-ray (Harvey et al., 2010). SPRING also involved a phone call during pregnancy from the research nurse and a home visit one month after birth. The study at hand was given ethics approval by the Southampton and South West Hampshire Research Ethics Committee.

### 2.2. The questionnaire

The objective of the questionnaire was to capture the prevalence of reasons for declining to participate in the SPRING trial. Women were approached to participate as they attended for their nuchal translucency scan approximately 12 weeks pregnant. If they declined, they were invited to complete a questionnaire (available on request from the first author) indicating their reasons from this list: I don't want to take pills during my pregnancy; I don't want my baby or me to have a bone density scan; I feel too unwell; I don't like blood tests; the research sounds too complicated; I am too busy; they will ask too many personal questions; I didn't really understand what I was being asked to do; there is no point in taking part if I end up not getting the vitamin D; I don't want to take part in any research; there is no point in taking part if I can just get Vitamin D at the chemists; and other reasons accompanied by space for free text. These response options were determined empirically: items were generated from self-reported reasons women gave upon declining to participate in trials that were recorded in the trial recruitment logs before this study commenced and the items were then refined with an expert panel. The questionnaire also recorded standard demographic information and invited women to leave contact details if they were prepared to be interviewed about their reasons for deciding

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات