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CLINICAL PAPER

Factors affecting women's adherence with pelvic floor muscle exercises in a first pregnancy: a qualitative interview study

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Abstract

Evidence-based national guidelines recommend that women practise pelvic floor muscle exercises (PFMEs) during their first pregnancy in order to reduce the likelihood of becoming incontinent of urine. Adherence to these exercises during pregnancy is low, although little is known about the factors that influence some women to exercise during pregnancy while others do not. The aim of this study was to increase understanding of the motivating factors for, and barriers to, performing PFMEs during a first pregnancy using data gathered from four qualitative interviews. Analysis of the interview transcripts revealed four relevant themes: knowledge and understanding; experience of incontinence; attitude to incontinence; and cues to exercise. Having adequate knowledge of the PFMEs and the benefits of these exercises, knowing an incontinent woman of the same age and believing that the PFMEs would prevent incontinence, and having a regular cue to exercise prompted exercise adherence. Recommendations are made for practice and further research.

Keywords: adherence, first pregnancy, motivation, pelvic floor muscle exercises, qualitative interview study.

Introduction

Pregnancy and childbirth are implicated in the development of female urinary incontinence (UI) (Kapoor & Freeman 2008). The number of women who experience UI during pregnancy has been reported as being as high as 64% (Chiarelli & Campbell 1997), and incontinence persisting into the post-partum period has a negative effect on the sufferer's quality of life (Hermansen *et al.* 2010). National Institute for Health and Care Excellence guidelines (NICE 2013) recommend that all women should practise pelvic floor muscle exercises (PFMEs) during their first pregnancy in order to reduce the likelihood of developing UI.

The potential of PFMEs to prevent or ameliorate UI in the pregnant population has been

established by several randomized controlled trials (Reilly *et al.* 2002; Mørkved *et al.* 2003; Ko *et al.* 2011), and also by a recent Cochrane Review (Boyle *et al.* 2012). However, the number of women who practise the exercises during pregnancy is low, with two studies reporting rates of approximately 54% (Chiarelli *et al.* 2003; Whitford *et al.* 2007).

Three qualitative studies have sought to understand the reasons why some women practise PFMEs in the post-partum period. Mason *et al.* (2001) carried out semi-structured interviews with women who were experiencing post-partum UI, whereas Gillard & Shamley (2010) interviewed women who had suffered an obstetric anal sphincter injury. Both studies found that fear of, or actual experience of, incontinence was a significant motivating factor for performing PFMEs, whereas the barriers were identified as being unaware of the potential benefits of the

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exercises and forgetting to exercise. Furthermore, Mason *et al.* (2001) found that patients were motivated by being advised to exercise by a credible source, and also by knowing someone who had been helped by PFMEs, whereas Gillard & Shamley (2010) found that increased feelings of self-efficacy and a regular cue to exercise were significant motivating factors. Chiarelli & Cockburn (1999) undertook a series of focus groups with postnatal women to gather information upon which to base a continence promotion programme. Remembering to exercise was a significant barrier to adhering to a PFME programme. Further barriers were a lack of knowledge regarding the risk of UI, and not feeling susceptible to developing UI.

Whitford & Jones (2011) studied primiparous and multiparous women using a quantitative approach, and found that self-efficacy was the strongest predictor of PFME performance. Bø *et al.* (2007) also used a quantitative approach, but determined that multiparous, regular (general) exercisers and those in a higher socio-economic class were more likely to perform PFMEs, as were women suffering from UI or pelvic girdle pain.

No studies have been identified that investigated PFME adherence in women during their first pregnancy. Therefore, the primary aim of the present qualitative study was to investigate the factors that influence primigravid women undergoing routine antenatal care to adhere to PFMEs.

Participants and methods

Research design

Data were gathered from cross-sectional, qualitative, semi-structured interviews. The interview schedule was informed by the health belief model (HBM), a conceptual framework for determining why people engage in health-promoting behaviours (Janz & Becker 1984).

Ethics and informed consent

Ethical approval was granted by the following bodies: the National Health Service (NHS) Health Research Authority's National Research Ethics Service; the Calderdale and Huddersfield NHS Foundation Trust's Research and Development Department; and the University of Bradford's Humanities, Social Sciences and Health Studies Research Ethics Panel.

Prior to commencement of the interviews, the participants gave their informed consent, and

were given the right to withdraw from the study at any time.

Sample and setting

A purposive sample of primigravid women was recruited. The exclusion criteria were: women under the age of 18 years; those who were unable to give informed consent; and women who were unable to understand written and spoken English. Participant information sheets were issued to eligible women at their routine 21-week appointment by their community midwife. Women who were interested in participating then contacted the researcher directly to arrange a convenient time for an interview. Four participants were recruited, and all chose to be interviewed at their place of residence. Three of the women were university graduates, and one was a full-time university student at the time of the study. The age range of participants was 20–34 years (mean=29.25 years), and they were between 22 and 28 weeks' gestation.

Data collection and analysis

The interviews were digitally recorded and listened to several times before being transcribed verbatim. The transcripts were anonymized by assigning the participants a number (P1–P4), and the data were analysed by theoretical thematic analysis. The initial coding was theory-driven (Braun & Clarke 2006) and based on the dimensions of the HBM.

Results

Four relevant themes emerged: (1) knowledge and understanding; (2) experience of incontinence; (3) attitude to incontinence; and (4) cues to exercise.

Theme 1: knowledge and understanding

This theme encompassed the participants' knowledge and understanding of how to perform PFMEs, the benefits of having a strong pelvic floor and what might weaken the muscle, and also the source of their information.

Two of the women had discussed PFMEs with midwives during their pregnancies. Of the remaining participants, one had not discussed the exercises with her midwife, and one was unsure as to whether her midwife had mentioned it to her:

“I say no, but she might have done and I might have forgotten. . .” (P3)

They identified different sources of their knowledge: P2 stated that she knew about the exercises from a “baby book”; and P3 had gained her knowledge from searching the Internet and reading a blog.

One of the women (P2) admitted to not knowing how to contract her pelvic floor. However, the other participants were confident that they knew how to perform the exercise, and were able to describe how to do so with varying amounts of detail. The most comprehensive description was given by P1:

“I know the sort of thing you’re supposed to do, like tense all three parts like the back passage, vaginal walls and stop you having a wee at the same time, and then lift.” (P1)

The number of sessions of PFMEs that the participants believed would be beneficial varied between once or twice a day. None of the women referred to doing fast and slow contractions while exercising. Neither of the participants who exercised their PFMs was aware of any simple ways of checking that they were working the muscles correctly, or mentioned having their technique checked by a health professional.

The detail and accuracy of the participants’ knowledge of the benefits of having strong PFMs varied. Both P1 and P4 referred to reducing incontinence, and other benefits were described by P1:

“Sex life later on as well . . . and labour is obviously easier if you’ve got a strong pelvic floor muscle.” (P1)

One participant had very little knowledge:

“I know your pelvic muscles should be strong and stretchy for . . . like it pushes you back into shape after you’ve had your kid . . .” (P2)

One of the participants did not believe that there were any benefits:

“I don’t know from what I’ve read that there is such a long-term benefit from having a strong pelvic floor . . .” (P3)

As with the benefits of having a strong pelvic floor, the participants’ knowledge of what might weaken the muscle varied. Childbirth was identified by P1 as potentially weakening the pelvic floor, whereas pregnancy was identified by P3 and P4:

“I guess that the fact I am growing this extra thing will be pushing down [on the pelvic floor muscle].” (P4)

This participant (P4) also mentioned that tearing during labour might weaken the pelvic floor.

One participant was unaware of what might weaken the muscle:

“I don’t know – positioning, how you sit and stuff?” (P2)

Despite correctly identifying pregnancy, P3 had read an Internet blog that had caused her to develop some other ideas as to what might cause pelvic floor weakness, which she thought was synonymous with stretching the muscle:

“... [L]ong term, it might potentially cause damage, by clenching it [the pelvic floor] – you’re stretching it and I don’t know what the long-term benefit might be, and that might be why there is such a problem [with incontinence] in the UK.” (P3)

Theme 2: experience of incontinence

This theme encompassed personal experience of incontinence, and also whether the participants knew of any female incontinence sufferers and felt personally susceptible to the condition.

One of the participants had begun to experience incontinence during pregnancy:

“... I’ve had that a lot as well since being pregnant. Since I get migraines and stuff, when I’ve got one and I’m in the mode of having a migraine and I’m throwing up, I cannot control my bladder, like.” (P2)

She had reasoned that incontinence when vomiting (a form of stress UI) was a normal part of pregnancy, and was unaware of anything she could do to resolve it. When asked how it made her feel, she replied:

“... [Y]ou don’t really notice, but it’s kind of annoying ’cause there’s nothing you can actually do about it.” (P2)

One participant (P4) did not know any women who had problems with incontinence, but both P1 and P3 did:

“My friend who’s just had twins, she warned me about sneezing and weeing herself . . .” (P1)

The women P3 knew were not of her own age:

“Older, yeah, much older – I would say menopausal sort of age?” (P3)

To assess the participants’ feelings of susceptibility, when asked if they thought that it was likely

that they would experience incontinence either during the pregnancy or postnatally, two of the participants replied as follows:

“I can’t think of any reason why I would.” (P4)

“Truthfully, no . . . No, I don’t [think that it is likely].” (P3)

While P1 did not think that it was likely that she would develop incontinence, this was because she regularly exercised her pelvic floor, and seemed to gain significant motivation from the belief that this would prevent any problems developing:

“I hope not, that’s why I’m doing my exercises. I really don’t want to be one of those people who wees themselves.” (P1)

Theme 3: attitude to incontinence

To assess the severity with which the three participants who had remained continent during their pregnancy viewed UI, they were asked how they would feel if they should lose control of their bladders. The prospect of experiencing incontinence was described using similar terms:

“Disgusting [giggles]. Like an old woman [giggles].” (P1)

“Probably be slightly mortified [laughs], like, oh God, you can’t even control your own bladder [laughs].” (P3)

“Probably cry, I’d be mortified.” (P4)

However, one participant then expanded on her original statement:

“... [Y]eah, but I suppose it depends how bad it is – it’s different degrees for everybody, isn’t it?” (P3)

Theme 4: cues to exercise

Of the two women who exercised their pelvic floor, only one had found a reliable cue to exercise:

“... I do them on the train on my way to work . . . [laughs] I do them in between Huddersfield and Dewsbury . . .” (P1)

One participant (P4) had not found a cue to exercise. She did her exercises:

“Just when it pops into my head really.” (P4)

Her reason for not remembering to exercise had an overlap with the lack of susceptibility to incontinence noted in the previous theme:

“... [T]his doesn’t feel real that this thing is going to emerge out of you, so you forget to do them and think of other things to do with the bump.” (P4)

While P4 was obviously aware that she was pregnant, the birth of her baby seemed unreal to her, and therefore, things related to the birth, in this case potential weakening of her pelvic floor, were not foremost in her mind.

By the fourth interview, the impact of the themes on the participants’ adherence to PFMEs was beginning to emerge; of the four participants in the study, only two performed PFMEs. Adherence with the exercises was affected by a lack of knowledge, and also inappropriate beliefs gained from an unreliable source. The women who had discussed the exercises with a midwife did perform PFMEs. Regular exercise performance was enhanced when the woman: had a reliable source of information; knew of someone of a similar age who had experienced incontinence; believed that the exercises would prevent her from becoming incontinent; and had a regular cue to exercise.

Discussion

No previous studies have used a primigravid population undergoing routine antenatal care to investigate the factors that influence adherence to PFMEs. However, some of the issues that affected the participants in the present study in terms of their adherence to the exercises have been identified in other study populations.

The participants’ level of knowledge and understanding affected their adherence to PFMEs, with insufficient knowledge being a barrier to exercising. This has been reported by other researchers (Chiarelli & Cockburn 1999; Mason *et al.* 2001; Gillard & Shamley 2010). Without knowledge of the correct technique, or the associated benefits, it was not possible to make an informed choice to exercise. Women with a firm grasp of the benefits of exercising were more likely to perform PFMEs. Having PFMEs explained by a midwife also increased the likelihood of exercise adherence. This was also reported by Mason *et al.* (2001), who found that exercise adherence was promoted when the exercises were advocated by a credible source. No previous studies have described participants revealing ill-informed views regarding PFMEs, and citing these as the reason for non-adherence with the exercises, as occurred in this study when a participant’s sole source of information was an

American Internet blog. However, with the ever-increasing use of unregulated digital media, this issue may become more frequent. Believing that the exercises themselves were harmful was a significant barrier to PFME performance, but one that could be avoided or surmounted by women receiving balanced information from a reliable source.

Previous studies have identified actual incontinence, or fear of it, to be significant motivating factors for exercise adherence (Mason *et al.* 2001; Gillard & Shamley 2010), and this was partially reflected in the present study. The only participant in the study who was incontinent (P2) was not currently practising PFMEs, although this was a result of a lack of information on the exercises themselves, as well as not knowing what might help to alleviate her incontinence. Although the other participants all felt similarly towards the prospect of UI, this alone was not enough to prompt regular exercising without also feeling susceptible to becoming incontinent. Chiarelli & Cockburn (1999) also reported a lack of susceptibility to UI in the post-partum women whom they studied. Fearing becoming incontinent and believing PFMEs to be protective of continence were significant motivating factors for one participant. Knowing someone of a similar age who had experienced incontinence appeared to increase feelings of susceptibility, although knowing women with UI who were at a different life stage (in this case, menopausal) did not increase feelings of susceptibility.

Several authors have reported that not remembering to exercise is a significant barrier to performing PFMEs (Chiarelli & Cockburn 1999; Mason *et al.* 2001; Gillard & Shamley 2010), whereas having a reliable cue to exercise promotes regular exercise performance (Gillard & Shamley 2010). This was also found in the present study: only the participant who had established a cue to exercise (P1) completed PFMEs on a daily basis.

Limitations

The present study has a number of limitations that affect the generalizability and validity of the results. The educational level of the participants was not representative of the study population, and the mean age of the participants was 29.25 years old. It is possible that the factors that affect younger and less-educated women's adherence with PFMEs differ from those presented in this study. Because of the resource implications of

translation services, women who did not speak English were not approached, and the results cannot be generalized to those women who reside in the UK, but are unable to communicate in English.

Initially, a sample size of 10 was sought on the basis of a study of PFME adherence using a different study population (Gillard & Shamley 2010). However, this sample size was not attained, and data saturation was not achieved (Sim & Wright 2000). It is not known how many women were given information regarding participation in the present study because numbers were not recorded by the staff responsible for handing out participant information sheets, and the reasons for women not engaging with the study are also unknown.

There was lack of validation of the interview transcripts. This could have been achieved while maintaining the participants' anonymity, but it was not included in the original study protocol because of an oversight by the first author (H.E.C.), who was a novice researcher. Respondent validation (Mays & Pope 2006), i.e. participants in the study reviewing and commenting on the research findings, would also have increased the validity of the present results.

Finally, the interviews were carried out by an inexperienced researcher (H.E.C.). Since research interviewing skills differ from the skills required to question a patient in a clinical environment (Britten 2006), it is possible that some of the themes were underexplored.

Conclusions

Despite the limitations alluded to above, it is possible to make the following practice recommendations for healthcare professionals who come into contact with women during their first pregnancy. To promote adherence with PFMEs, a primigravid woman must be helped to develop a firm knowledge and understanding of PFMEs so that she can make an informed decision about whether or not to undertake these exercises. This should include evidence-based advice regarding the benefits of PFMEs and the potential consequences of not doing these, and how to perform the exercises correctly. Primigravidae should be given the opportunity to discuss any beliefs that they might have regarding the exercises in order to ensure that inappropriate ideas are challenged and discussed. Healthcare professionals can further encourage adherence to PFMEs by assisting the primigravid woman to identify a cue to exercise in their daily schedule.

Because of the limitations of the present study, further research is required into the factors that affect PFME adherence in women during a first pregnancy. Ideally, a sample that is representative with regard to the age and ethnic mix of the primigravid population would be studied, and a mixed quantitative and qualitative approach employed in order to gain further insight into PFME adherence. In turn, this would enable healthcare professionals caring for this population to maximize patients' adherence with the exercises, and therefore, reduce the incidence of UI during pregnancy and the postnatal period.

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