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CLINICAL PAPER

Qualitative study exploring effective timing and methods for physiotherapy-led pelvic health education during the childbearing year

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Abstract

Physiotherapy-led pelvic health education (PPHE) may help to address some of the potentially adverse health outcomes that are associated with pregnancy and childbirth. However, there is wide variation in the provision of this education during the childbearing year, and limited evidence for when and how it may be effective. Five studies with different methodologies have previously investigated the effectiveness of PPHE during the childbearing year. However, no consensus can be found because of the variety of timings and methods that were investigated. Five women were purposively recruited to participate in semi-structured video interviews about their experience of PPHE during the childbearing year. These sessions were audio-recorded and then transcribed verbatim. The transcripts were analysed using thematic analysis. This revealed three themes with three emergent factors that were identified as influencing the effectiveness of PPHE: assimilation, timing and delivery of the message. It is hoped that these findings will: add to the evidence base in the field; help health professionals to understand the factors that may influence women's engagement with education during the childbearing year; be considered in local service development plans; and direct further research.

Keywords: childbearing year, pelvic health education, qualitative study, thematic analysis.

Introduction

Pregnancy and childbirth have long been associated with adverse health outcomes, such as diabetes, weight gain and mental health issues (Montoya Arizabaleta *et al.* 2010; Shakeel *et al.* 2018). Pregnancy and childbirth are also documented risk factors for pelvic floor dysfunction (PFD) (JBI 2011; Sut & Kaplan 2016; Johannessen *et al.* 2017; Schreiner *et al.* 2018; Salmon *et al.* 2020). These potential consequences of pregnancy and childbirth are often modifiable or preventable; for example, by performing pelvic floor muscle exercises (PFMEs) (JBI 2011; Panhale & Mundra 2012; Wilson *et al.* 2014) and being physically active during pregnancy (Nascimento *et al.* 2015). In addition, both the National Health Service (NHS) Long Term Plan (NHS 2019) and the National Maternity Review (NMR 2016) highlight the importance of developing healthcare strategies that address preventable illness.

The recommendations in the literature, and also guidance provided by the National Institute for Health and Care Excellence (NICE 2008), are that women should receive education regarding exercise during pregnancy, including PFME (JBI 2011; Frawley 2013). It is recognized that women given this information are more likely to follow the advice (Nascimento *et al.* 2015). Specialist pelvic health physiotherapists are well placed as experts in the field to provide this to women (Salmon *et al.* 2020), but current physiotherapy-led pelvic health education (PPHE) during the childbearing year varies widely. The

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term "childbearing year" is defined as the period of pregnancy, recovery from childbirth and the phase of lactation, which together occur over a time span of at least 12 months (Hammer *et al.* 2000). Provision of PPHE varies widely: some deliver it to antenatal groups in community settings, others postnatally to individuals in hospital settings and still others provide none at all. This is consistent with current thinking that, despite some pelvic health physiotherapists providing advice and treatment to women during the childbearing year, there is no standardization of care (Brook 2020).

Despite this disparity, it has been suggested that the childbearing year represents a prime opportunity for educating women regarding their health because of their frequent contact with healthcare professionals (HCPs), and an invested interest in their own and their baby's health (Daly *et al.* 2016). However, there are also associated challenges. Anecdotally, antenatal women tend to focus on planning for birth while postnatal women are likely to prioritize caring for their newborn, leaving limited time for pelvic health education. Indeed, acutely postnatal women are often fatigued and lack concentration, which consequently reduces their ability to retain information and makes them less able to absorb verbal education (Tweddle 2002). Written material could be an alternative, but this is often disregarded or discarded (Wagg 2009). Women in the postnatal stage may experience time restrictions, particularly as they return to normal routines (Tweddle 2002), or sideline their own health while their baby remains their priority (Wagg 2009).

Five previous papers were identified by an iterative literature search process that explored provision of pelvic health education to women during the childbearing year. To maintain relevance to the disciplinary context of the present project, the MEDLINE database, and the Cumulative Index to Nursing and Allied Health Literature were searched using specific terms based on a population intervention comparison outcome strategy. Additionally, the Cochrane Library was trawled for systematic reviews, and grey literature searches of Google Scholar, OpenGrey, the British Library's E-theses Online Service and COnnecting REpositories were performed to ensure that any material inaccessible through database searches was captured. This process identified 26 papers, of which five matched the inclusion and exclusion criteria. A synthesis of the papers through critical appraisal and analysis revealed that this existing literature base lacked homogeneity and direct comparison of different timings, and therefore, categorical recommendations could not be made. However, two themes relevant to the topic under review were identified. In relation to the first, i.e. the timing of PPHE during the childbearing year, various schedules were discussed, including several points during pregnancy, the early postnatal stage prior to home discharge and the later postnatal period (e.g. 6 weeks after birth). In relation to the method of PPHE provision during the childbearing year, education in isolation was only reviewed in two of the papers, and only one discussed its effectiveness.

Tweddle (2002) suggested that: postnatal classes held prior to hospital discharge may be effective in educating new mothers about PFME; antenatal and postnatal education programmes may support urinary health, dietary health and improved health-related quality of life (Walton *et al.* 2019); and antenatal PFME may improve pelvic floor strength and urinary function in the later antenatal and early postnatal stages (Sut & Kaplan 2016). Furthermore, the Joanna Briggs Institute concluded in their literature review that education regarding PFME should be provided both antenatally and postnatally (JBI 2011), and Wilson *et al.* (2014) concurred with the previous suggestion that provision of PPHE varies between institutions and clinicians.

Without categorical evidence regarding when and how PPHE should be provided, it is suggested that obtaining information directly from service users may be beneficial. The perspectives of HCPs alone are insufficient because their views on client needs may differ from those of the service users themselves (Lindquist *et al.* 2015). Utilizing feedback from clients may support the development of services that are consistent with their expectations and enhance health outcomes (Heberlein *et al.* 2016). Within maternity services specifically, consideration of the preferences of service users enables the development of optimal, client-centred care that is responsive to women's needs (Vermeulen *et al.* 2018).

Aim and project question

The aim of the present study was to establish whether the timing and method of PPHE provided in local practice was effective at making women engage with the education and advice provided. For reference, local practice involved providing women with PPHE in the early postnatal period in the hospital setting, followed by a telephone check and reiteration of the

Table 1. Participant characteristics

	Variable		
Participant	Type of birth	Parity	Postnatal timing of interview
P1	Forceps delivery	3	6 weeks and 4 days
P2	Forceps delivery with episiotomy	2	6 weeks and 6 days
P3	Forceps delivery with episiotomy	2	6 weeks and 2 days
P4	Vaginal delivery with episiotomy	2	8 weeks and 0 days
P5	Vaginal delivery with third-degree tear	2	6 weeks and 2 days

information at 6–8 weeks after birth. However, this was limited to women who had sustained an obstetric anal sphincter injury, received an episiotomy or undergone a forceps-assisted birth.

The study attempted to answer the following research question: "What factors do postnatal women believe influence the effectiveness of PPHE during the childbearing year?" It was underpinned by a relativist ontological philosophy and an interpretivist approach, which involved gathering various perspectives on the selected topic (Robson & McCartan 2016). Case study methodology enabled a holistic and in-depth investigation that generated an understanding of the topic under review (Tight 2007; Simons 2009; Yin 2018).

Participants and methods

Ethical approval for the present study was granted by Digital and Lifelong Learning (previously the Centre for Professional Practice) at the University of Kent. Additionally, permissions were sought from appropriate gatekeepers at Medway NHS Foundation Trust, the host organization, and access was granted by its Research and Innovation Department, both of which were required as a result of a change in the first author's (D.M.'s) place of employment. The participant profile was a postnatal multiparous woman who had experienced PPHE in her recent childbearing year, but not in previous ones. This profile resulted in a homogeneous purposive selection that offered multiple perspectives based on both recent and previous experiences with a comparison of the childbearing year with and without PPHE. Individuals who had had babies admitted to the neonatal unit for care lasting longer than 3 weeks after birth, had experienced a neonatal death or did not speak English were excluded from the study.

It was planned to recruit six participants from a local acute hospital's postnatal unit through a member of the physiotherapy team specializing in pelvic health, ideally a clinician who did not provide these individuals with PPHE (see Table 1 for their characteristics). After verbally consenting, each participant was invited to an individual video interview that was conducted by the first author (D.M.) when the participant was between 6 and 8 weeks postnatal. Interviews were semi-structured and utilized a guide to direct the process. However, these allowed the researcher (D.M.) some flexibility to ask additional questions and follow up interesting leads (Leonard 2003), and the participants could supply their own answers without the constraints of a fixed set of possible responses (Bray 2008; Robson & McCartan 2016). The interviews lasted for approximately 1 h, and were audio-recorded and automatically transcribed verbatim. The transcripts were subsequently sent to the individual participants for member checking, and once confirmed, these were analysed.

Data analysis

The participant transcripts were analysed using the four-phased thematic analysis of Green *et al.* (2007). The first phase of data immersion involved the researcher interviewer (D.M.) repeatedly reviewing the transcripts, which enabled her to make connections between the seemingly disjointed pieces of information provided by each participant while allowing the content to remain fresh in her mind. In the second phase, i.e. coding, the transcripts were revisited, and aspects of the text that related to a particular code were highlighted. The third phase, i.e. creating categories, involved examining the codes to compare and group these into sets that related to the project question. The final phase involved the exploration of potential links between the categories, enabling the identification of themes and an understanding of the meaning of the data.

In practice, these phases did not succinctly follow on from each other, but involved moving back and forth among the stages to make appropriate amendments and ensure that the resulting analysis accurately represented the data. All the steps of data collection and analysis were carried out by the first author (D.M.) working in

collaboration with the second (D.R.), who was her MSc project supervisor.

Results

Six participants were initially sought; however, only five were recruited because a higher number of women than anticipated declined to participate. The main result of the thematic analysis process was the rendering of all the raw data as 26 codes, then eight categories, and finally, three themes: the ability to assimilate the PPHE message; the timing of this message; and the method of delivering it. Table 2 presents the codes, categories and themes that emerged, as well as the corresponding definitions. The findings from each theme are presented below and typified by some of the comments made by individual participants, who are identified by the numbers that they were given (see Table 1).

Ability to assimilate the message

Through the responses of the participants, the present study revealed aspects of the childbearing year that may influence a woman's ability to assimilate information, and that consequently influence the effectiveness of the knowledge provided, including the PPHE message. Some participants commented on the volume of data received during this period, and how information overload affected their ability to absorb or remember it all:

> "[. . .E]verything is such a blur and it's hard to take on." (P1)

> "[. . .Y]ou have other stuff going on – so you do tend to forget things." (P3)

Therefore, the participants were keen for information to be as accessible as possible. A specific example provided by them was PFME. One individual (P1) reported that, even prior to receiving PPHE, she had been performing PFMEs because every practitioner was telling her to do these. On the other hand, those participants who had not been provided with this information prior to receiving PPHE in their recent childbearing year were unaware of a need to access these facts and had not engaged with doing PFME:

> "[. . .]I just hadn't thought of it." (P4)

When participants were aware of the information that was required, but were not being provided with this by an HCP, they reported seeking it for themselves. Specific sources of information that they mentioned included apps, books, the Internet, and family and friends, although the consensus was that the information and advice provided by a professional had slightly greater value.

However, participants remarked that aspects of the HCP's approach may act as enablers of or barriers to the assimilation of that information. Those who were dismissive or appeared offhand negatively affected engagement:

> "I could tell she was just ticking a box and that is how I felt. And even with my answers, when I did say, 'Oh, I'm not sure,' she didn't elaborate on them or offer any extra advice. I didn't find that helpful at all and I felt a bit like, *Well, they didn't care much*, to be honest." (P1)

Conversely, engagement was enabled by HCPs who gave women their time and provided clear information:

> "We went through that [the leaflet], everything on there and in detail, and added some extra detail to it as well and it was quite calming. . . It was a positive experience." (P4)

Participants also reported that their ability to assimilate information about their own health was enhanced if they were the focus on the conversation, rather than it also including information about the baby:

> "And your priority is the baby, the information on the baby, and how to keep the baby safe and how to look after the baby – to the point where you're putting yourself second best – you're not really listening to the information about you." (P5)

There was also a comment regarding the positive influence of continuity of care. In this case, a participant had received their follow-up telephone call from the same clinician who had provided the initial postnatal PPHE:

> "[. . .I]t was the same person[. . . H]e remembered everything, and he seemed aware of everything again, so I thought that was a nice touch, and it made me feel confident as well." (P4)

Another aspect that the participants reflected on as a potential enabler of or barrier to assimilation was having somebody like a partner, friend or family member present during PPHE provision. It was suggested that having someone else in attendance could enhance the experience as a

Table 2. Codes, categories and themes: (PPHE) physiotherapy-led pelvic health education; and (MDT) multidisciplinary team

Code	Category	Category definition	Theme	Theme definition
(1) Information overload (2) Accessibility of information (3) Presence of others (4) Professional approach (5) Focus of women (6) Current circumstances (7) Negative feelings	Barriers to and enablers of the assimilation of information	Elements that may hinder or enable women to assimilate information during the childbearing year	Ability to assimilate the PPHE message	Effectiveness of the PPHE message may be influenced by women's ability to assimilate information
(8) First childbearing year (9) Subsequent childbearing year (10) Sources of information (11) Understanding of PPHE (12) Perceived value of PPHE	Individual experiences and beliefs	Experiences and beliefs that may affect knowledge and understanding of the PPHE message		
(13) Provision of antenatal PPHE (14) Provision of acute postnatal PPHE (15) Provision of PPHE postnatally at 6 weeks and beyond (16) Multiple provision of PPHE during the childbearing year	Provision of PPHE at various stages of the childbearing year	Views regarding the provision of PPHE at various stages of the childbearing year	Timing of the PPHE message	Effectiveness of the PPHE message may be influenced by the timing of delivery
(17) Written information (18) Video clips (19) Apps/electronic information (20) Verbal information	Presentation of PPHE	Experiences of and suggestions for various modes of presenting PPHE	Method of delivering the PPHE message	Effectiveness of the PPHE message may be influenced by the method of delivery
(21) One-to-one education (22) Class-based education (23) Telephone consultation (24) Face-to-face education	Mode of delivering PPHE	Experiences of and suggestions for various modes of delivering PPHE		
(25) Link with midwives (26) Link with general practitioners	Link with the MDT	Views regarding PPHE being linked with the provision of care from other members of the MDT		

result of the "extra support" (P3), having someone "to remind me" (P5) and enabling "understanding of the importance" of the information (P2). Conversely, it was also suggested that having another person present: "distracts you" and that information absorption is "better on your own" (P4); and that, because of the sensitive nature of some topics of discussion during PPHE (e.g. perineal hygiene, bowel management and continence), it may be "embarrassing to talk about it" (P1).

Participants reported that their individual experiences, circumstances and beliefs may affect their knowledge and understanding of the PPHE message, and consequently, their ability to assimilate it. Some individual circumstances formed a barrier to assimilation, with participants citing being a single parent, having a baby with health concerns or experiencing a traumatic delivery as examples:

> "I was looking at him[. . .] I wasn't hearing anything that he was saying because I'd just gone through this massive thing [a traumatic birth], and my partner wasn't with me. I was really stressed out, I was on my own, I was really scared." (P5)

Other negative feelings, such as tiredness and being overwhelmed, were also recognized as barriers to accessing and assimilating the PPHE message.

Participants reported differences in their ability to assimilate information in their current childbearing year compared to previous ones. It was stated that the first time was a bit more "overwhelming" (P4), "everything's very new" (P1), and women "don't know what to expect or what it's going to be like." (P4). However, it was also stated that it should not be presumed that multiparous women have fewer educational requirements than primiparous women:

> "I don't think it made it easier because I've already had a baby, because they were both so different. The second one to me was a hundred times harder." (P5)

Timing of the message

The present study revealed aspects of various timings during the childbearing year that may influence the effectiveness of PPHE. All the participants had received PPHE in the early postnatal period while in hospital, and they commented on the positive influence that this had on its effectiveness:

> "[. . .O]nce you've had the baby, it's not really something that you immediately think about[. . . T]hey talk about it a lot during the pregnancy – pelvic floor muscles, and this and that – but then, once you['ve] had the baby, that thought process kind of goes out of your head[. . . S]o, it's quite nice [. . .] after having baby to reinforce that." (P2)

However, this timing was not considered effective by everyone:

> "[. . .B]ecause, once that's baby's here, that's when my time's gone, 'cause you're overwhelmed with a new baby and tired." (P1)

There were some suggestions that the provision of PPHE at different postnatal stages may be effective:

> "[. . .A] telephone appointment a few days or a week later, when the pain starts to ease." (P5)

> "[. . .M]aybe had I been told that 3 days later, maybe when I was suffering a little [. . .] that might have been helpful[. . .] I probably would have used it and done that." (P1)

Additionally, the later postnatal stage, which was when the participants were interviewed, was proposed as potentially effective timing:

> "[. . .T]his would be exactly the right time." (P4)

The reasons given for suggesting that this would be an effective time to receive PPHE were that women are starting to feel "settled into a routine and a bit more confident" (P1), starting to "recover in those areas" (P4), and "wondering what's normal and what's not" (P1).

However, it was also mentioned that this would depend on individual trajectory of postnatal recovery and the health of the baby. One participant (P2) had spent most of her time since the birth repeatedly visiting the hospital so that her baby could undergo tests. Therefore, she reported that she still would not have the potential to absorb additional information about herself and her long-term pelvic health. Additionally, it was suggested that the provision of further PPHE would not be necessary in the later postnatal stage if it had been provided earlier in the childbearing year.

Despite not having received PPHE during pregnancy, the participants generally identified this as potentially effective timing. It was considered to be a time when preparation begins, which

is conducive an openness to receiving education. Antenatal provision of PPHE may also encourage women to consider their own health throughout the childbearing year, rather than just in the postnatal period, when their pelvic health could already be compromised:

> "I feel antenatal because I think, if you just discuss it afterwards, and the mum-to-be hasn't really taken on board what [she's] meant to be doing for the pregnancy, some of the damage is probably already done[. . .]" (P2)

Breaking this down further, participants commented on the provision of PPHE during different stages of pregnancy, suggesting that PPHE may be "a good idea" later in pregnancy or during the third trimester (P3). In support of this, early pregnancy was reported to be probably less effective:

> "[. . .In] the first trimester, your head's all over the place[. . .]" (P2)

Participants also reported that it may be difficult to assimilate the PPHE message during the first trimester. This is because women are likely to be preoccupied with adjusting to pregnancy and anxious about reaching the "safety" of the 12-week scan, or they may forget the advice as the pregnancy progresses. However, the potential benefits of early antenatal provision of PPHE were also recognized:

> "[. . .I]f you have the information quite early on, you are going to be a bit more aware of it." (P3)

Leading on from this, it was suggested that certain topics within the scope of PPHE may be more suited to being provided at different times during the childbearing year. For example, education regarding pregnancy-related musculoskeletal pain, PFME and guidance on exercise during pregnancy would be most effective if provided antenatally:

> "I wasn't sure what I could and couldn't do, so I didn't do anything[. . . I]t would be great to get some ideas on what you can and can't do beforehand." (P4)

However, other topics, such as management of perineal pain, perineal hygiene and postnatal bowel health would be more effective in the early postnatal stage:

> "[. . .I]t would have been good because I did struggle with my bowels after the baby this time[. . .] I think postnatally for that one as well." (P4)

With the range of topics potentially covered within the scope of PPHE and different subjects being suited to different timings, there was some suggestion that provision of PPHE may be more effective as a pathway that spans the childbearing year, which would enable the delivery of "bite-sized" pieces of information at the right time:

> "[. . .B]efore and after would have been helpful because, before, you haven't experienced it yet, but after – when you're actually going through it – if someone's offering, you know, 'Try this,' then you might." (P1)

> "I personally think, like a pathway – so an introduction to it in the antenatal stage [. . .], but then, equally, knowing that after you've had the baby, they won't be forgotten about – this will be readdressed." (P2)

Method of delivering the message

The present study revealed aspects of various methods of delivering information that influenced the effectiveness of PPHE. The participants had been provided with verbal PPHE that was supported with written information in the form of a leaflet that they could refer to afterwards. They commented on the effectiveness of the leaflet, and the consensus was that written information contributed to effective PPHE by aiding information recall:

> "[. . .A]lthough I didn't remember what I had to do, he did give me the leaflet, which I then did obviously read later on." (P5)

However, it was suggested that written PPHE in isolation was unlikely to be effective as "it kind of gets shoved in your bag and forgotten about" (P3), and that its use in conjunction with verbal information would enhance the effectiveness:

> "[. . .B]ecause I had the chat [. . .], I was like, 'Let me read back through that,' just to remind myself of the conversation we had." (P2)

Among the participants, there was a consensus that verbal delivery of PPHE is most effective, particularly because it provides the opportunity for women to clarify information or ask questions, and that it would be more effective provided in a face-to-face session, rather than via telephone:

> "I think face-to-face [. . .] because they can stress how important it is." (P5)

Another aspect of the method of delivery that was discussed by the participants was the provision of PPHE in a class environment compared to a one-to-one session with the physiotherapist. They had only experienced PPHE on a one-to-one basis, and this was described as "incredibly beneficial" (P4), "the best way" (P5), and "less embarrassing and daunting" (P1), particularly when more-personal topics were discussed.

However, the potential benefits of the class-based provision of PPHE were mentioned:

> "You tend to learn a lot from other people's opinions and questions." (P2)

In addition to verbal and written information, the participants also mentioned that electronic methods (e.g. apps or video clips) could be utilized to provide PPHE, although there were mixed views regarding how effective this would be:

> "[. . .I]f there was an app or something on your phone, you could just [. . .] read up on something you're not quite sure on[. . .] I do think an app might be a good idea." (P5)

> "[. . .B]ecause I think, if I pick up my phone – I tend to go to social media first and check, you know, do other stuff. Message someone[. . .]" (P2)

> "If there's like videos and things like that, and it's more interactive" (P5)

> "I'm not sure people would have time to watch videos." (P1)

It was also identified that physiotherapists collaborating with other HCPs may be an effective way to provide PPHE during the childbearing year. Midwifery appointments were suggested as opportune times for providing PPHE since women were likely to be in the right frame of mind to accept education and ask questions:

> "I think, maybe, when you're going to see the midwife, maybe there should be one of the physios there to give you a little class at the time." (P5)

Alternatively, combining sessions with general practitioners at the 6-week check-up was also suggested:

> "I think there should be [another contact with the physiotherapist], whether they were there at the 6-week check[-up], if it was made more informative at 6 to 8 weeks after. I think that's really important – it's where a lot of information should be discussed and given and offered." (P1)

Discussion

Three corresponding factors emerged from the themes highlighted in the results reported above.

Assimilation

The first factor that influenced the effectiveness of PPHE during the childbearing year emerged from the theme defined as "ability to assimilate the message". The participant experiences reported in the present study resonate with the concept of "health literacy", which refers to the ability to acquire, access, understand and utilize information that promotes and maintains good health (Lori *et al.* 2017). Indeed, it has been suggested that knowledge is not synonymous with understanding, and that knowledge acquisition is likely to be superficial and information may not always be retained, particularly during the childbearing year (Carolan 2007).

The participants in the present study reported limitations to their ability to absorb, retain and recall the PPHE message because of the volume of information that they received throughout the childbearing year. Indeed, Aquino *et al.* (2018) found that healthcare appointments during the childbearing year can result in information overload. There is a suggestion in the literature that dealing with too much information can lead to anxiety (Carolan 2007), which is an additional factor for physiotherapists to consider when providing PPHE. In addition to this, the present participants identified accessibility of information as an influence on assimilation. It may be obvious that, for health information to be effective, the intended recipients need to be aware that it exists, but in the present study and for the specific example of PFMEs, an improved awareness of these increased efforts to perform these regularly.

The present participants also revealed that they sought information for themselves, either in addition to routine care or in the absence of specific information. The sources highlighted were consistent with the findings of other papers (Carolan 2007; Henshaw *et al.* 2018). However, there are documented issues regarding information-seeking behaviour during the childbearing year: it relies on women understanding what knowledge they require, and also knowing where to locate reputable information and how to interpret any

conflicting advice (Henshaw *et al.* 2018). In the present study, women showed a general preference for receiving information from HCPs because they were considered to be more trustworthy. However, women's information-seeking behaviour should be anticipated, and therefore, HCPs should provide evidence-based information to ensure that clients have the correct amount of reliable information and check their level of comprehension to ensure assimilation (Carolan 2007; Heberlein *et al.* 2016).

The present study revealed that the approach taken by an HCP may act as an enabler of or barrier to assimilation. These findings are consistent with the concept of patient–provider relationships influencing the effectiveness of care (Heberlein *et al.* 2016). It was suggested that positive relationships encourage women to seek help and become more engaged with healthcare. Conversely, negative relationships result in feelings of distrust or distress, and a consequent lack of engagement with or withdrawal from care. This point was echoed in the participants' reflections on their recent experience of PPHE provision. They said that kindness, focus and continuity of care contributed to their ability to assimilate and engage with the PPHE message. Additionally, they discussed the benefits of being the focus of the conversation during the provision of information regarding their own health, rather than it being delivered alongside information about their baby. Mothers typically do not focus on their own health, but on that of their new baby (Tweddle 2002; Carolan 2007; Henshaw *et al.* 2018), and therefore, it may be possible that focusing solely on the woman's health may encourage her to do the same.

The participants mentioned that their individual experiences, beliefs and circumstances might affect their knowledge and understanding of the PPHE message, and consequently, their ability to assimilate it. Circumstances such as being a single parent, looking after an unwell baby or coping with the aftermath of a traumatic delivery were highlighted as issues that were associated with feeling overwhelmed, and consequently, unable to retain information. The literature has identified other circumstances that may have a similar effect, such as an unplanned pregnancy (Lindquist *et al.* 2015) and being an older mother (Carolan 2007). The participants also discussed the benefits of having someone else with them during the provision of PPHE, which is supported by Henshaw *et al.* (2018), who identified that women's partners are a source of support during the childbearing year. On the other hand, some of the present participants highlighted the fact that being accompanied may be embarrassing or distracting, a fact that is not apparent in the current literature. However, the literature reviewed focused more on provision of routine midwifery advice, as opposed to sensitive advice such as perineal hygiene, PFME and bowel health.

The participants also reflected on differences between their first and subsequent childbearing years that influenced their ability to assimilate the PPHE message. These reflections were consistent with the relevant literature, which suggests that first-time mothers are provided with an overwhelming volume of information (Carolan 2007). However, it should not be assumed that multiparous women require less support or information because they have experienced the childbearing year before. The quality of the advice that was previously provided will not ameliorate their current trauma or distress (Fenwick *et al.* 2010). Multiparous women may benefit from education during the childbearing year because every pregnancy presents different challenges, and information received previously may have been forgotten or may have changed (Heberlein *et al.* 2016).

Timing

The second factor that influenced the effectiveness of PPHE during the childbearing year emerged from the theme defined as "timing of the PPHE message". Participants commented on the provision of PPHE in the early postnatal stage. Both the present study and the literature found conflicting views about how this timing influences the effectiveness of PPHE. The present participants reasoned that the early postnatal stage was effective because of the convenience of it being provided while still in hospital, and having had some time to process the experience of childbirth, which afforded women the time and reassurance to consider their recovery.

The findings in the literature are similar: women often focus on their baby in the early postnatal stage and may feel shocked by a range of concerns (Lindquist *et al.* 2015); therefore, having HCPs available to discuss these may be beneficial. However, this may explain why, for some, the early postnatal period was not the ideal time to receive PPHE. Henshaw *et al.* (2018) reported that some women felt overwhelmed and had difficulties remembering information, which links back to the first factor, assimilation.

Participants in the present study commented that the later postnatal stage, i.e. approximately

6–8 weeks after birth, might be less overwhelming and support increased focus on their own health. There was a paucity of literature regarding the provision of maternal health education at this stage of the childbearing year, which was probably because routine midwifery care in the UK is time-limited in the postnatal period.

Despite not having received PPHE in the antenatal stage of the childbearing year, the participants generally identified this as a potentially effective time, a finding that is supported by Lori *et al.* (2017). The present participants suggested that PPHE provision during pregnancy would aid preparation for birth, enable an openness to education and encourage consideration of their health throughout the childbearing year. The literature additionally reports that the benefits of antenatal education include: learning in advance about what may be experienced throughout the childbearing year; being able to respond to anticipatory advice and education; and developing positive health behaviours (Heberlein *et al.* 2016). There was no consensus in either the present study or the available literature about the effectiveness of the provision of information at specific timings during pregnancy. However, there was some suggestion in the present study that certain topics within the scope of PPHE may be more effectively taught during the antenatal period, while others are better suited to the postnatal period. In order to address this, it was suggested that a PPHE pathway across the childbearing year might be beneficial in enabling provision of the relevant information at the right time.

Delivery of the message

The third factor that influenced the effectiveness of PPHE during the childbearing year emerged from the theme defined as "method of delivering the PPHE message". Participants were provided with their PPHE verbally, and given a leaflet of supporting information to take home. This combination of multiple forms of delivery of the message has been identified as enhancing information retention (Lori *et al.* 2017). Written information alone was considered ineffective since it is likely to be lost among the plethora of other material received and forgotten about. The verbalization of information was recognized to be paramount to its effectiveness and value was given for a full explanation of any questions. These reflections were consistent with the literature, where it has been reported that, in the absence of adequate discussion, women are left to decipher what is important (Fenwick *et al.* 2010).

Participants in the current study recognized the worth of additional options for delivery of the PPHE message, such as apps or the Internet. These methods are supported in the literature: apps may enable engagement in physiotherapy programmes (Postolache *et al.* 2014); and professionally moderated social media groups may enhance the effectiveness of information provision (McCarthy *et al.* 2020).

Participants in the current study also discussed delivery of the message in individual and group sessions. Linking back to the second factor, timing, individual provision of PPHE was generally suggested to be most effective in the early postnatal stage. Groups were considered as potentially effective antenatally, although postnatal classes had been identified as effective by Tweddle (2002). Antenatally, groups were considered effective in delivering the PPHE message by participants. This finding is supported by the literature, where class settings have been reported to enable learning from other people's experiences and questions, enhancing effectiveness, and linking back to the first factor, enhancing assimilation (Lori *et al.* 2017).

Additionally, the present participants commented on the potential benefits of delivering PPHE in conjunction with other professionals, which Aquino *et al.* (2018) also considered to be an effective care model.

Summary

Figure 1 depicts the interrelatedness of the three factors that influence the effectiveness of PPHE in diagrammatic form.

Assimilation is considered to be the overarching influence on the effectiveness of PPHE because timing and method of delivery are less important if the information cannot be assimilated. Timing is a significant influence on the effectiveness of PPHE, and this needs to be considered in conjunction with assimilation. Thirdly, method of delivery is an important influence on the effectiveness of PPHE that needs to be considered in conjunction with the first two factors, assimilation and timing.

Limitations

This was a local and small-scale qualitative study. The five participants were all recruited from a small geographical area and the same acute hospital trust, which means that the findings are not generalizable to the whole population. Despite this, the planned number of

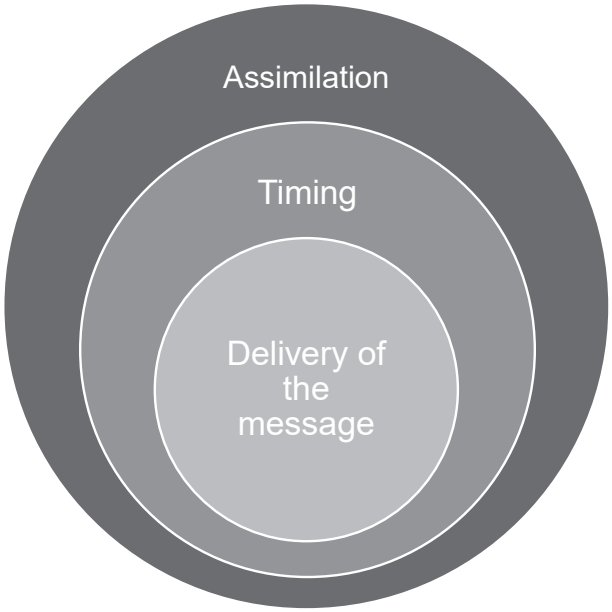

Figure 1. Model of factors that influence the effectiveness of physiotherapy-led pelvic health education.

participants was appropriate for the timespan of the study, and the selected methodologies were appropriate. The holistic approach and in-depth investigation from multiple perspectives is considered to generate a clear understanding of a specific topic (Simons 2009; Tight 2017; Yin 2018), and supports the extraction of rich data.

During the planning the project, it was proposed that face-to-face interviews should be conducted. However, because of the restrictions enforced during the COVID-19 pandemic, the interviews had to be conducted virtually. Video rather than telephone interviews were selected in order to enable the researcher (D.M.) to respond to non-verbal cues from the participants, although it is recognized that this would probably have been further enhanced in face-to-face interviews. One interview was also interrupted several times as a result of the battery failure of the device that the participant was using and a delivery being made to her address. These issues might have been avoided in face-to-face interviews, where the researcher (D.M.) would have had more control over the environment where these took place. Despite this, it is believed that the video interviews enabled an in-depth exploration of lived experiences of PPHE during the participants' childbearing years.

Additionally, all five participants had experienced complicated births and were multiparous, and it is recognized that women with less-complicated deliveries may provide a different perspective. However, as previously discussed, this was a result of the criteria used in the host trust for postnatal women receiving PPHE. The same argument applies to the absence of primiparous women in the present study because they too would probably offer additional perspectives. However, as previously discussed, it was felt that multiparous women would enable richer data as a result of their multiple experiences, and the purposive selection of participants supported the study methodology.

Recommendations for further research

It has been established that there is a paucity of research into the effectiveness of the provision of PPHE during the childbearing year. Therefore, it is hoped that the present study can contribute to the developing evidence base in this professional field, and provide some insight into the factors that may influence the effectiveness of PPHE during the childbearing year. This study could represent a pilot project for more-focused research following a similar methodology in which a larger pool of women from maternity services in different geographical areas could be interviewed. Alternatively, a quantitative survey that uses a representative population might help to produce more generalizable findings.

Conclusions

Using a case study methodology, the present authors explored the lived experience of PPHE provision for women who had recently experienced the childbearing year. The key factors identified as influencing the effectiveness of PPHE were assimilation, timing and delivery of the message. Women's ability to assimilate the PPHE message is essential to consider since the timing and delivery of the message are less important if the information cannot be assimilated by the recipient. Physiotherapists should consider women's current circumstances and past experiences, and utilize effective communication and appropriate attitudes that are suited to each individual situation. This may enhance women's ability to assimilate the PPHE message, and consequently, its effectiveness.

The timing of the PPHE message was also an important consideration for professionals providing PPHE. The current timing of providing information in the early postnatal stage with a follow-up telephone call in the later postnatal period was considered to be effective by some participants. However, other timings, particularly during the antenatal period, might also be effective, but this could only be demonstrated by further research.

The method of delivering the PPHE message was the third consideration for professionals providing PPHE. Again, current provision was deemed effective, but other methods should be considered in conjunction with timing and women's ability to assimilate the PPHE message.

The present findings have provided the researcher (D.M.) with a greater understanding of the factors that influence the ability of postnatal women to engage with information. Bearing the limitations noted above in mind, these will be used to inform service development plans for the first author's (D.M.'s) current pelvic health service in maternity care. The implications for other clinical services are limited because of the non-generalizability of the data obtained. However, the present findings contribute to the small amount of evidence that is currently available, and may encourage other HCPs to consider the factors that can influence the effectiveness of the information that they provide to women during the childbearing year.

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