

**Please cite as:**

Wuytack, F., Curtis, E., Begley, C. (2015). Experiences of first-time mothers with persistent pelvic girdle pain after childbirth: descriptive qualitative study. *Physical Therapy*, 95, 1354-1364.

**Abstract**

**Background**

Pelvic Girdle Pain (PGP) is common during pregnancy and negatively affects women's lives. When PGP persists after the birth, the way it impacts on women's lives may change, particularly for first-time mothers as they adjust to motherhood, yet the experiences of women with persistent PGP remain largely unexplored.

**Objectives**

The objective of this study was to explore primiparous women's experiences of persistent PGP and its impact on their lives postpartum, including caring for their infant and their parental role.

**Design**

A descriptive qualitative study.

## **Methods**

Following institution ethical approval, 23 consenting primiparous women with PGP that had started during pregnancy and persisted for at least 3 months postpartum participated in individual interviews. These were recorded, transcribed, and analysed using thematic analysis.

## **Results**

Four themes emerged: (1) 'Putting up with it: coping with everyday life'; women put up with the pain but had to balance activities and were grateful for support from family and friends to face everyday challenges, (2) 'I don't feel back to normal'; feelings of physical limitations, frustration and a negative impact on their mood were described, (3) 'Unexpected'; persistent symptoms were unexpected for women due to a lack of information given about PGP, (4) 'What next?'; the future of their symptoms was met with great uncertainty and women expressed worry about having another baby.

## **Conclusion**

For first-time mothers, having persistent PGP postpartum impacts their daily lives in many ways. These findings provide important information for healthcare providers, which will improve their understanding of these women's experiences, enhance rapport, and can be used to provide information and address concerns, to optimise maternity care during pregnancy and beyond.

## **Body of Article**

### **Background**

Pelvic Girdle Pain (PGP) is pain of musculoskeletal origin between the posterior iliac crest and the inferior gluteal fold in proximity of the sacroiliac joints, and pain may also be experienced at the pubic symphysis.<sup>1</sup> Pelvic Girdle Pain is often related to pregnancy, although not exclusively. Pregnancy-related Pelvic Girdle Pain (PPGP) is a common complaint affecting from 23% to 65% of pregnant women, depending on the definition used in prevalence studies.<sup>2-9</sup> The pain often subsides after birth, but about 17% still have PGP 3 months postpartum<sup>10</sup> and 8.5% continue to have symptoms 2 years postpartum.<sup>11</sup>

Pain is a perception whereby physical, cognitive, affective, social and behavioural aspects intertwine,<sup>12, 13</sup> hence the meaning of pain is subjective and contextual and requires examination beyond mere quantification. Recently, 3 qualitative studies explored the impact of PPGP on women's lives during pregnancy. Themes that emerged from these studies included feeling unprepared for PPGP, struggling to balance activities and dependency, and the importance of being understood by healthcare professionals.<sup>14-16</sup>

The postpartum period is a time of great change, particularly for first-time mothers. Infant care is a demanding activity and may coexist with other challenges; including exhaustion, changes in relationship when becoming a parent, and financial burdens. The transition to motherhood, defined as "a process of personal and interpersonal change when a woman assumes maternal tasks and appraises herself as a mother"

(pp204),<sup>17</sup> also referred to as the process of 'becoming a mother',<sup>18, 19</sup> impacts on developing mother/child relationships.<sup>20</sup> This dynamic process is influenced by women's physical, social and psychological well-being,<sup>21, 22</sup> and delayed postpartum recovery adds to the disruption inherent in this transition.<sup>23</sup> When PGP persists after birth the context of a woman's pain experience encompasses the care of her child.

Until recently no significant studies had explored the experiences of women with persistent PGP after childbirth. Engeset et al<sup>24</sup> interviewed 5 women with postpartum PGP concerning their experiences of living with their persistent symptoms. The impact of persistent PGP on women's lives that emerged from this small study warrants further exploration in a larger sample to provide more in-depth information on women's experiences with persistent PGP postpartum. The study included 3 primiparous and 2 multiparous women, whereas it may be valuable to ascertain women's experiences on the first occurrence of PGP. The objective of the present study was thus to explore primiparous women's experiences of persistent PGP and its impact on their lives postpartum, including caring for their infant and their parental role.

## **Methods**

A descriptive, qualitative design was adopted, which aims to provide a rich straight description of a phenomenon.<sup>25</sup> In line with this study's objective of providing a truthful account of the women's experiences, this design is not theory-driven and wishes to stay as close as possible to the participants' descriptions of their experiences with minimal interpretation.<sup>25, 26</sup> Despite this low-inference approach,

qualitative description is more interpretative than quantitative designs, allowing us to learn more about the meaning that participants give to events.<sup>26</sup>

### ***Ethics***

Ethical approval for this study was granted by the site hospital in 2011, and by Faculty of Health Sciences Ethics Committee of Trinity College Dublin (Ireland) in March 2013. All participants provided written informed consent to take part in a recorded interview.

### ***Participants***

Twenty-three participants were recruited from the MAMMI (Maternal health And Morbidity in Ireland) study, a longitudinal survey-based cohort study. All primiparous women, aged 18 or older, who attended a large maternity hospital in Dublin (Ireland) between February 2012 and October 2014 were asked to take part in the cohort study, which involved completing a survey concerning their health and well-being at 5 different time points; during early pregnancy, and 3, 6, 9 and 12 months postpartum. One thousand eight hundred thirty-three women consented to participate in the MAMMI study during this period, a 38% (n=4809) response rate. A purposive sample of 23 women, who met the inclusion criteria below, were recruited from this cohort (Figure 1). Data saturation, the point at which no new codes emerged,<sup>27</sup> was reached at 20 interviews but all 23 interviews were included in the analysis.

Inclusion criteria to take part in the interview were; (1) written consent to be contacted concerning any interview within their MAMMI study consent form; (2) experiencing PGP between the posterior iliac crest and the inferior gluteal fold and/or in the pubic symphysis area<sup>1</sup> (indicated on a pain diagram) that had started during pregnancy, that persisted for at least 3 months postpartum, and was still present at the time of the interview. A minimum of 3 months persistent PPGP was chosen because persistence beyond 12 weeks is considered 'chronic'.<sup>28</sup> Exclusion criteria were; (1) any history of Low Back or Pelvic Girdle Pain before their pregnancy, (2) suspected serious pathology (trauma, infection, malignancy) or nerve involvement (for example radiculopathy), (3) resolution of PGP by the time of interview. These selection criteria were assessed based on women's responses in the MAMMI surveys and during telephone recruitment for this interview study. The telephone recruitment process was conducted by a qualified chiropractor (FW) and was guided by a flow diagram consisting of a set of questions to assess potential participants' suitability to take part in an interview. This included detailed questioning concerning their pain location and any symptoms of weakness, numbness or paraesthesia. Moreover, women were asked whether they had experienced any injuries/trauma or recent illnesses, took any medications, or experienced any systematic or visceral symptoms such as fever, unexplained weight loss, general malaise, urinary or abdominal symptoms. These recruitment questions were constructed by FW and reviewed independently by the other authors, and by a consultant obstetrician and anaesthesiologist before use. Table 1 shows the participants' characteristics regarding their pain and sociodemographic data.

## ***Data Collection***

Face-to-face interviews took place between June and October 2013, at a time and in a place convenient for the women; 17 women were interviewed at their home, 4 interviews took place in a private room at the university, and 2 in a public location. Prior to the interview the women completed a short pre-interview questionnaire that included a pain diagram to confirm the pain location and questions concerning pain pattern and pain severity. Other sociodemographic data including age, highest qualification and the number of days postpartum when taking part in the interview, was obtained from the MAMMI study surveys. An interview guide consisting of open-ended questions was used (Appendix 1), but women were free to direct the interview in other directions if they so wished.

## ***Data Analysis***

Interviews were transcribed verbatim, checked twice for transcription errors, and imported into NVivo 8 software<sup>29</sup> for data management and analysis. Thematic analysis was used whereby, after familiarisation with the data, all interviews were coded.<sup>30</sup> First, open coding was used to assign a word or short phrase, 'a code', to all portions of narratives. This was followed by axial coding to identify emerging categories, and broader themes.<sup>31</sup> Table 2 demonstrates the coding process using example quotes. FW analysed all 23 transcripts. CB coded the transcripts of 3 interviews independently prior to any discussion concerning the data, for quality control. As analysis of the 3 transcripts demonstrated congruence between the two researchers' findings, no further reviews were necessary. Other strategies to enhance methodological rigour included negative case analysis and member-

checking.<sup>32</sup> For member-checking, the identified categories and themes were sent to the women in writing, together with a short questionnaire to assess the extent to which these resonated with them and to give them the opportunity to comment on the findings, thus enhancing credibility of the data.<sup>33</sup> In addition, a reflective diary was kept by FW who conducted the interviews and analysis, in which critical reflections on the process and personal assumptions were entered.<sup>34</sup> These were discussed during regular peer debriefing sessions, promoting dependability, ensuring the research process was logical, and enhancing conformability, ensuring the findings were clearly derived from the data.<sup>33</sup> The results section contains quotations to support the findings. These quotes are identified by a number for confidentiality purposes, and the number of days since the birth is also indicated.

## **Results**

Four themes emerged from the experiences that women described; (1) 'putting up with the pain: coping with everyday life', (2) 'I don't feel back to normal', (3) 'unexpected', and (4) 'what next?'. Fourteen of the 23 participants responded to the member-checking of the results. All but 1 woman said that theme (1) was true to life/significant. This woman no longer had pain at the time of the member-checking, which may explain the difference between her interview transcript and her response to member-checks. Theme (2) was initially called 'I feel like an old woman', but following member-checking, half of the participants who responded did not think the name appropriate despite the relevance of its content and categories. Subsequently, the name of theme (2) was changed to 'I don't feel back to normal'. Only 1 woman did not say that theme (3) was true to life/significant, but in her original transcript she



had said that she had not expected her pain to go away immediately after the birth. Theme (4) resonated with all but 4 participants. These 4 participants no longer had any symptoms, which is probably why the theme 'What next?' no longer had significance for them. Table 3 gives an overview of all categories and themes that emerged from the data.

### **(1) 'Putting up with it': coping with everyday life**

#### *Attitudes to pain: balancing activities*

Women said they generally just 'put up with the pain' and 'got on' with their daily lives. In that context, they also told how they often had no choice in avoiding pain-provoking activities if nobody was around to help. However, some women (8/23) said that their persistent PGP stopped them from doing things or going out of the house, although for others the pain was present but did not prevent activities. Many women (12/23) expressed that the PGP is something they have to be cognisant of when doing and planning things, but they could not make it a priority in their busy lives as new mums.

*I suppose the honest thing is; it's at the bottom of a long list of things that I have to worry about at the moment so I ignore it, I just let it go.*

*(10; 170 days)*

This ambiguity reflects the challenging balancing act that women had to deal with daily; on the one hand continuing as normal and on the other hand trying to avoid worsening of their symptoms.

### *Coping & Support*

Many women (12/23) felt they could cope well with their persistent PGP, although they wished the pain would no longer be present. Women's partners played a crucial role in providing support to manage daily activities with the additional burden of having persistent PGP. Other family members were a great support for women too in various ways, by minding the baby sometimes and helping with housework. Although their partners and family members were the main sources of help, 5 women also said they received support from friends.

*I've friends that kind of say 'If you need a break, drop her in', or 'if you need to go off shopping or whatever, just to get a bit of headspace even', you know. They've all been very good. (17; 132 days)*

One woman also employed someone to assist with housework, such as cleaning, because of her PGP.

### *Everyday challenges*

Women said their persistent postpartum PGP affects their ability to do everyday activities. All women described how their PGP affected activities related to taking care of their child such as lifting and carrying their baby, and getting down on the floor to play with him/her. Four women said they were afraid of dropping their baby if they had a sudden pain.

*When I get that sharp type of pain, that worries me that, you know, you might get weakness or something when you're carrying him*

*(baby), like that the pain would come if you'd move a certain way carrying the car seat or whatever. (1; 209 days)*

Although they generally still could continue such activities despite the pain, they expressed frustration that it made these everyday tasks more difficult. Moreover, 10 women said that household activities were challenging and provoked pain, although this was regarded as less important than taking care of their baby. Women did not feel their PGP impacted their general health, with the exception of 1 woman who said she thought that taking painkillers would not be good for her health, and 2 women who referred to the possible negative impact on their health of not being able to exercise much.

## **(2) 'I don't feel back to normal'**

### *Physical feelings of pain*

Women described their pain in a variety of ways depending on its pattern and severity. Eight women mentioned it was a more constant or dull pain while 5 women described experiencing more severe or sharp pain. Women who had more constant pain felt that they were coping less well than the women who said their pain was intermittent. Five women described their PGP, not only in terms of the pain, but also how it made their body feel weaker and more restricted.

*I started to exercise more because I was able to with her (baby), and then I felt the pain was getting worse again. It felt like my pelvis was about to fall apart. That's the only way to describe it; it feels like it is kind of hanging and about to fall. (12; 300 days)*

Moreover, 9 women said that their PGP slows them down. Seven women used the metaphor of 'feeling like an old lady' to describe this. Four women said that it felt as if they were still pregnant. Nine said that their PGP was very draining and made them feel even more tired, particularly for those women who also experienced symptoms at night (7/23).

*It's just I suppose because you're over-tired from having a small child and that it's just another layer of exasperation, you know (2; 227 days).*

#### *Cognitive components of pain: Why me?*

All 23 women questioned why the pain was still there and tried to think of possible reasons. Some (13/23) put it down to their posture and the way they carry and lift, or because their body was weakened from the pregnancy. Others (6/23) thought it might be because of a difficult birth that the PGP persisted. Someone else read it could be hormonal as she was still breastfeeding, while another woman noticed it was worse mid-menstrual cycle. Some thoughts also provoked worry. Seven women were worried about being able to keep up when their child is older and starts walking. Three women also questioned whether they are damaging their pelvis more over time by just putting up with the pain.

*It just makes simple enough things harder and then you have always a bit of worry; I am damaging something? Am I doing permanent damage by all the lifting or whatever way you're moving? (1; 209 days)*

### *Affective components of pain*

Women felt frustrated and annoyed by the pain, especially because they could not do the activities they wanted to do. However, women expressed joy because of having a baby and 11 women said that the PGP did not, and they would not let it, impact on being a good mother. On the other hand 7 women did feel that sometimes they were not able to do as many things with their child as they would like.

*It affects things, certain things I can't do with her (baby)...that would be the one that really bugs me; the fact that I can't get down on the floor with her and kind of have a play with her; that really bothers me.  
(2; 227 days)*

Nine women also described how they felt the pain was having a negative impact on their mood and made them less patient.

*The pain just makes me cross and grumpy and out of sorts, and just niggly, that you'd love to go to bed but you can't go to bed. It's just, yeah, if you didn't have a baby, I would have been in bed a long time but you just have to get on with it. (22; 235 days)*

The 5 women whose pain was improving also expressed feelings of happiness and relief that it was getting better.

### **(3) 'Unexpected'**

*Thought it would be gone by now – previous expectations*

During pregnancy many women (18/23) thought their PPGP symptoms were just 'part of pregnancy'. As a result they thought the PPGP would resolve with the birth or

they had had no expectations during pregnancy about what would happen postpartum with regards to their symptoms.

*But yeah, I thought it would just go away after the birth. I didn't really know I guess, I didn't think anything different. (3; 167 days)*

As a result, for 2 women it felt that it took some time to acknowledge they continued to have problems.

*You kind of have to admit to yourself; yes there is still stuff left over from pregnancy and it has to be dealt with. (1; 209 days)*

Four women said they had not expected the pain to go away straight away after the birth; however, despite the fact that they had expected some PGP postpartum, they had not thought that it would persist for so long. Also, 4 women said they were somewhat surprised the pain persisted as they used to be fit before pregnancy.

#### *Lack of information*

Women (12/23) felt unaware of any problems that might persist postpartum and expressed a desire for more information regarding specific issues that they might encounter after the birth, for example, persistent PGP.

*It would be great if there was more information about this type of pain, what to do about it. We got leaflets on the pelvic floor; it was all about the pelvic floor and doing the pelvic floor exercises, but that isn't really what's been impacted in me; it's more the joints and the skeleton, kind of the hips and the back of the pelvis, the tailbone, that sort of thing. (19; 119 days)*

#### **(4) 'What next?'**

##### *A changing pain*

Although for all women their PGP had started during pregnancy and persisted postpartum, for many, symptoms had changed over time. This change, however, varied across participants. Ten women said their symptoms were somewhat different at the time of the interview compared to during pregnancy. For some the pain had become less severe, for others the pain had increased since the birth, or sometimes the type of pain had changed. Three women also mentioned that the pain location had changed; for example, from side to side or the front to the back of the pelvis. The first few days or weeks immediately after the birth 10 women described how their PGP symptoms had been temporarily 'hidden' behind general aches or other birth-related issues. For others (8/23) it was also the adjustment to motherhood that 'hid' the PGP that early postpartum period.

*I had a C-section, so initially when I came home from hospital my focus was on the section pain. And I was trying to reduce the painkillers and get used to being more mobile. I first noticed the issues with my pelvis were still there when I was going up and down the stairs. (19; 119 days)*

##### *Uncertainty & hope for the future*

All women strongly hoped their symptoms would go away soon. However, they were doubtful whether they would. Women whose symptoms had improved somewhat

over time (7/23) were more hopeful about the future progression of the PGP than those who had worsened or equally severe symptoms.

*I hope it's going to go away. And I can try and get a bit stronger, like I said. It is less than it was, so I feel if I keep working on it, it will go away but I don't know. (6; 219 days)*

Six women expressed worries about going back to work and one was on sick leave. Twelve women also felt they would have to do something actively about it to improve, either by doing more exercise or seeking advice from healthcare professionals. One woman was an exception in that she thought she would just have to give it more time to resolve itself. Other people's stories about persisting symptoms after the birth added to the uncertainty and created worry about the progression of their PGP.

*I'd love to be just back to normal, pre-pregnancy, I wonder; is that possible? Is that normal? Does that happen? Because you know the way women say 'Well, wait until you have a baby' or you know 'Wait until you've your second' and they give you the impression that your body is never going to be the same again. (1; 209 days)*

*Having another baby: I'm worried but it would not stop me*

Eighteen women said that they were anxious that their symptoms would be worsened when having another baby, although it would not stop them from becoming pregnant again.



*I suppose I worry for the next pregnancy, what effect that might have.*

*It wouldn't put me off, but I worry it might be more of a constant*

*problem rather than just intermittent, you know. (24; 364 days)*

Four women felt they had to try and get their symptoms improved or resolved before becoming pregnant again. Six women also described how they would seek more help and try and manage it earlier on if they were to become pregnant again.

## **Discussion**

The findings of this study suggest that first-time mothers with persistent PGP after childbirth tend to 'put up with the pain' yet have to balance activities, 'don't feel back to normal', experience the persistence of their symptoms as 'unexpected', and wonder about progression of their symptoms in future.

### ***'Putting up with it': coping with everyday life***

The impact of persistent PGP on everyday life and the balancing of activities in this study have also been described previously by pregnant women with PPGP,<sup>14-16</sup> and thus seem to be a continuing challenge for women suffering from persistent PGP postpartum. Having a young child also makes it more difficult to pace activities,<sup>16</sup> which may explain why women felt they just had to 'put up with the pain' and 'get on with' their daily tasks. Nevertheless, women said they are conscious of their pain and try to adapt activities accordingly where possible. Pain has a tendency to conquer one's focus of attention<sup>35, 36</sup> and patients with chronic pain are known to experience cognitive impairment when performing everyday attentional tasks, regardless of the

disease status of chronic pain and the level of pain experienced.<sup>37</sup> The exception, 3 women said they tried not to think about their pain to help them cope, which may be because distraction reduces pain levels.<sup>38</sup>

Support in general when having one's first baby is important.<sup>39</sup> For women with PGP it is thus understandable that help of family and friends was very much valued, a feeling that was expressed by the women in this study. Social support has been defined as a complex concept consisting of 'resources and interactions with others that help people cope with problems'(pp11), and patients with pain do better when receiving adequate social support.<sup>40</sup> Women's partners were said to be a key source of support, which was also an emerging theme from studies looking at women's experiences of PPGP during pregnancy.<sup>14, 16</sup> However, the Women in the present study expressed they were very grateful for their partner's support, but they did not say it was putting their relationship under negative pressure, despite this increased dependence, unlike women with PPGP in previous studies, who described how their complaint puts strain on their relationship.<sup>14, 16</sup> This may, however, be because of sampling bias due to the nature of the sampling approaches of qualitative research.

A clear distinction emerged in terms of the meaning women placed on having difficulty carrying out certain tasks. Activities that were part of caring for their child and were affected by their PGP led to feelings of frustration, while for other tasks the meaning of women's pain was considered much less significant. In line with the current definition of pain,<sup>13</sup> this confirms that pain is a perception and not a mere physical sensation. This distinction of meaning of their pain is important, as it will likely influence the emotional aspects of women's pain experience.

***'I don't feel back to normal'***

Women described their physical pain in various ways during the interview, with different patterns and varying severity across participants. More severe pain in PPGP has been associated with greater functional disability; however, the impact of the pain pattern on disability has not been investigated as much.<sup>2, 10</sup> In contrast to Elden et al<sup>15</sup> who found that pregnant women had difficulties describing their PPGP, postpartum women did not seem to have this difficulty although they did use a variety of words to express their symptoms. This disparity may be because in this study women's pain had been present for longer and, over time, they became more familiar with their symptoms, making it easier to describe them. Women also said their pain slowed them down and they felt physically restricted, in line with past literature demonstrating that many women with PPGP report disability during pregnancy and postpartum.<sup>10, 41</sup> Furthermore, women felt their PGP was draining and tiring. Early motherhood is a time inherently characterised by reduced sleep due to the needs of the infant, but most women in this study felt their PGP added to this exhaustion although they were all first-time mothers and thus could not make comparisons with previous experiences. Pain is also related to sleep disturbance<sup>42</sup> and PPGP is associated with sleep deprivation.<sup>43</sup> In the context of chronic pain, reduced sleep may become a perpetuating factor. This added exhaustion and impact of PPGP on sleep that many women in this study experienced, has also been described by women with PPGP during pregnancy.<sup>16</sup> This may be one of the reasons why some women in this study said they 'still felt pregnant'.

People with chronic pain have been shown to ruminate upon the potential causes of their symptoms especially if the exact cause is unknown.<sup>44, 45</sup> Worrying about chronic pain is a normal process related to an increased awareness of somatic sensations, and pain-related worries have been shown to be more attention-demanding and more distressing than non-pain related worries.<sup>44</sup> Pain is also intimately related with one's emotional well-being. The extent of suffering depends on the affective response to the cognitive appraisal of the symptoms and worrying thoughts may subsequently lead to anxiety, distress and low mood.<sup>46</sup> The questioning about the cause and uncertainty about the progression of women's persistent PGP may have contributed to the negative impact on their mood and patience, and the sense of frustration that women in this study described. Other qualitative studies<sup>14-16</sup> found that, during pregnancy, women with PPGP described the same feeling of having less patience, being moody and quick to complain. Mogren et al<sup>47</sup> also found this to be an emerging theme that midwives had experienced when working with pregnant women with PPGP.

### ***'Unexpected'***

During pregnancy many women thought their PPGP symptoms were just 'part of pregnancy'. As a result they expected their PPGP would resolve soon after the birth, or they had had no expectations during pregnancy about what would happen postpartum with regard to their symptoms. Persson et al<sup>16</sup> interviewing women with PPGP during pregnancy, found that these women often endured the pain and looked forward to the birth, thinking that symptoms would then subside. Although PPGP commonly resolves postpartum,<sup>2, 48</sup> when this expectation is not met it may add to

negative appraisal of their symptoms due to the cognitive nature of expectations and its link with affective and behavioural aspects of the pain experience.

The described unmet expectations of what would happen to their PPGP symptoms postpartum, may be linked to the feeling that emerged, of a lack of information postpartum, which is similar to what 27 women with severe PPGP experienced during pregnancy in Sweden.<sup>15</sup> However, for the women in the present study with persistent PGP postpartum, this lack of knowledge seems to evoke more worry about its progression, whilst during pregnancy women were more concerned about the nature of symptoms.<sup>15</sup>

### ***'What next?'***

The changes in pain over time from pregnancy to the time of the interview described by the women in this study could be because of various reasons. Maladaptive postures or deconditioning due to reduced physical activity may have contributed to changing pain locations or worsening of symptoms described by some. Moreover, for some women, their symptoms had improved somewhat, which might present a progressive resolution of their PGP. Birth-related factors and unsuccessful adjustment to a normal gravitational posture could have contributed to the changes in their pain. No clear differences emerged between participants in this study related to pain location or time since delivery. Instead, any improvement or worsening in their symptoms seemed to have a bigger impact on women's experiences of persistent PGP, particularly on women's expectations and subsequent hope or frustration.

Episodes of pain-related worry are likely to be triggered by increased pain.<sup>44</sup> For a minority of women interviewed their symptoms had worsened since the pregnancy and most women hoped their symptoms would improve; however, they expressed doubt and uncertainty. Knowing how long a pain will last improves the reaction to the pain as it reduces uncertainty.<sup>44</sup> Women also expressed concerns about going back to work and 1 woman was on sick leave. Placing this in context of the literature on sick leave postpartum, in a cohort of 204 mothers (15 employers) in the Netherlands PGP was the most common reason for sick leave.<sup>49</sup>

Women with a history of PGP or Low Back Pain are more likely to develop PPGP when becoming pregnant,<sup>7</sup> hence the worry that women described of their symptoms worsening when becoming pregnant again is understandable. Elden et al<sup>14</sup> found that during pregnancy women with PPGP expressed that they are 'not looking forward to another pregnancy' because of their PPGP, whilst postpartum, feelings of worry and anxiety about another pregnancy seemed to be stronger, although it did not stop them wanting more children.

### ***Strengths and Limitations***

To our knowledge only 1 study previously explored women's experiences of persistent PGP postpartum. Engeset and colleagues<sup>24</sup> identified 3 main themes; activity and pain, lack of acknowledgement of pain and disability, and changed roles. The physical pain and limitations, feelings of exhaustion, and frustration related to their persistent PGP, described by these women,<sup>24</sup> show clear similarity to the

categories 'Everyday challenges', 'Balancing activities', and the theme of 'I don't feel back to normal' in the present study. Moreover, the content of the theme 'Unexpected' seemed apparent in Engeset et al<sup>24</sup> as a perceived lack of information, and unmet postpartum expectations experienced by their participants. The importance of support from the husband and family in the theme 'Changed roles' also matches what women described in the present study. However, the cognitive components of the pain experience that emerged from the present study did not feature in their study. Furthermore, the women in their study did not describe any thoughts about future pregnancies, and, although they expressed hope for the future similar to the women in the present study, any uncertainty about the future is not noted in Engeset et al.'s study.<sup>24</sup> Some of these discrepancies might be related to differences in the study sample and methods used. In Engeset et al<sup>24</sup> only 5 women were interviewed, and all 5 participants had already contacted the health services regarding their PGP after the birth. The present study greatly adds to knowledge regarding these women's experiences as it utilised a more diverse sample, by having recruited from a large cohort who had not necessarily contacted health professionals regarding their PGP. In addition, a greater number of participants were included, beyond the point of data saturation, which adds credence to the findings. Moreover, this study specifically explores the experiences of primiparous women, which allows identification of unique characteristics of first-time mothers' experiences. One limitation of the present study is that participants did not undergo a physical examination to differentiate between PGP and low back pain; however, the recruitment process involved detailed questioning concerning their symptoms, conducted by a registered chiropractor and, if there was any uncertainty regarding the nature of their symptoms based on this history, women were not included.

### ***Implications and Future research***

This study provides unique insights into the experiences of first-time mothers with PGP that persists for more than 3 months after the birth. The findings should assist healthcare professionals involved in the care of women during pregnancy and in the postpartum period to develop a better understanding of the complexity and multi-faceted nature of how persistent PGP impacts women's lives. Particularly, it highlights unmet expectations and can give guidance to those providing information to women regarding PGP. Future research exploring the experiences of multiparous women specifically would be of interest for comparison with the findings from the present study to identify potential differences in how women experience persistent PGP after childbirth depending on parity.

### **Acknowledgments**

We would like wholeheartedly to thank the women who took part in this study. We would also like to thank all staff at the study site for their invaluable work on recruitment, and the MAMMI study team for their work on recruitment, data collection, and data entry for the full MAMMI study from which the participants for the present study were recruited.



### ***Author's Contributions***

All authors were involved in the design of the study. FW conducted the interviews and data analysis. CB completed the independent analysis of 3 transcripts for quality assurance. FW drafted the manuscript. All authors reviewed this manuscript and made amendments to it.

### ***Conflicts of Interest***

There are no conflicts of interest.

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## Tables

**Table 1: Participants' Pain and Sociodemographic Characteristics**

<b>Participants' pain and sociodemographic characteristics</b>	
<b>Age</b>	<b>n</b>
≤ 24	2
25-29	2
30-34	12
35-39	7
<b>Country of birth</b>	<b>n</b>
Ireland	19
UK	1
Denmark	1
Italy	1
Poland	1
<b>Highest qualification</b>	<b>n</b>
Upper secondary leaving certificate – applied and vocation programmes., A levels, National Vocational Certificate (NCVA) level 1	2
Completed apprenticeship, NCVA level 2/3, Teagasc (agriculture/food) certificate, diploma or equivalent	1
Primary degree	6
Professional qualification of degree status	2
Postgraduate certificate or diploma	6
Postgraduate degree Masters	6
<b>Time postpartum at the time of interview</b>	<b>n</b>
3 to 6 months (91-182 days)	14
6 to 9 months (183-273 days)	6
9 to 12 months (274-364 days)	3
<b>Pain severity at the time of interview (VAS 10cm)</b>	<b>Mean (SD)</b>
Morning	5.0 (SD 2.3)
Evening	5.7 (SD 1.9)
<b>Pain pattern</b>	<b>n</b>
Constant	1
Intermittent	10
Transient	1

Constant & intermittent (day dependent)	10
Constant & transient (day dependent)	1
<b>Pain location</b>	<b>n</b>
Anterior PGP	2
Posterior PGP	14
Combined anterior & posterior PGP	7

**Table 2: Examples of Coding Process in Thematic Analysis of the Transcripts**

Transcript part	Codes	Category	Theme
<p><b>3:</b> I don't feel as strong as I should and I don't feel as active as I'd like to be. Now, it doesn't matter too much at the moment because she is not even crawling yet, but it she gets more active I want to be able to keep up with her. And I never saw myself as being inactive.</p>	<p>Feeling weak.</p> <p>Worry being able to keep up with child.</p>	<p>Physical feeling of pain.</p> <p>Cognitive components of pain.</p>	<p>I don't feel back to normal</p>
<p><b>1:</b> The only time it'd really kind of bother me would be when I get that sharp type of pain because that's kind of stopping you. That would kind of worry me that, you know, you might get weakness or something when you're carrying him or that, like that pain would come if you'd move a certain way maybe, you know, carrying the car seat or whatever. That bothers me, but the underlying kind of general pain I just put up with it, and don't think too much.</p>	<p>Feeling weak.</p> <p>Worry dropping baby.</p> <p>Just puts up with the pain.</p>	<p>Physical feelings of pain.</p> <p>Everyday challenges</p> <p>Attitudes to pain: a balancing act.</p>	<p>I don't feel back to normal.</p> <p>'Putting up with it': coping with everyday life.</p>

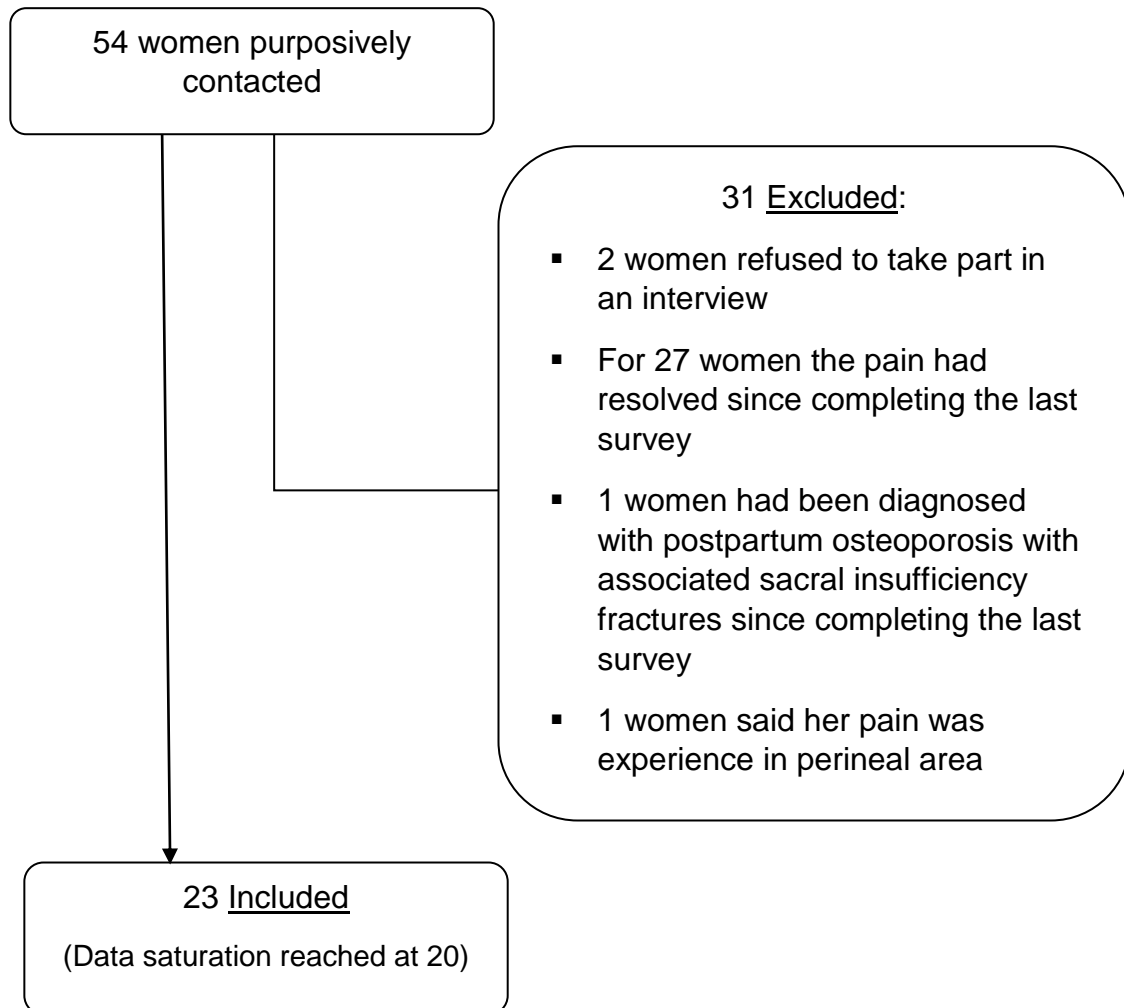
**Table 3: Overview of Emerging Themes and Categories**

Categories	Themes
<ul style="list-style-type: none"> <li>• Attitudes to pain: balancing activities</li> <li>• Coping &amp; support</li> <li>• Everyday challenges</li> </ul>	'Putting up with it': coping with everyday life
<ul style="list-style-type: none"> <li>• Physical feelings of pain</li> <li>• Cognitive components of pain: Why me?</li> <li>• Affective components of pain</li> </ul>	'I don't feel back to normal'
<ul style="list-style-type: none"> <li>• 'I thought it would be gone by now' –previous expectations</li> <li>• Lack of information</li> </ul>	'Unexpected'
<ul style="list-style-type: none"> <li>• A changing pain</li> <li>• Uncertainty &amp; hope for the future</li> <li>• Having another baby: 'I'm worried but it wouldn't stop me'</li> </ul>	'What next?'



## Figures

Figure 1: Overview of recruitment of participants for interviews



## Appendices

### Appendix 1: Interview Guidance Questions

<b>Grand tour questions</b>
A. Tell me about your experiences of living with pelvic girdle pain since you're a mother.
B. Going through a regular day, tell me the story of what you usually do and what your pain means?
<b>Possible Prompt questions</b>
<b>1. <i>Life as a new mother</i></b>
1.1. How do you feel about your pain when caring for your baby?
1.2. How does your pain impact the way you see yourself as a mother?
1.3. How do you feel when you are in pain?
1.4. How do you feel your pain impacts on your general health?
1.5. When you were still pregnant, what were your expectations about the pain for after the birth?
<b>2. <i>Interaction with others</i></b>
2.1. What has been the role of others (family, friends, lay people) in regards to your pain?
2.2. What, if any positive or negative aspects or experiences have you had regarding your pain?
<b>3. <i>Views on the future/progress</i></b>
3.1 How do you feel your pain will progress?
3.2 How would you feel about having another baby with regard to your pelvic pain?
<b>Ending question</b>
Is there anything else you would like to tell me?
<b>Additional probing questions may also include:</b>
Please tell more about it.
What does that mean to you?
Is it possible to give an example?
Describe to me what that was like for you.