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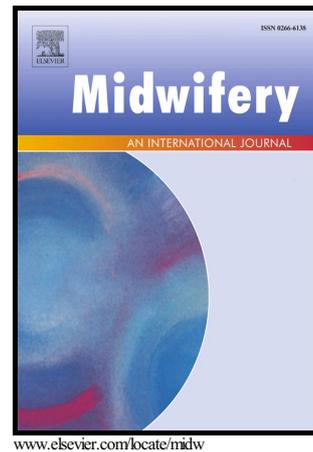
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Women's Experiences of Pregnancy Related Pelvic Girdle Pain: A Systematic Review.

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Abstract

Objective: To systematically review the available studies which relay the experience of pregnancy related pelvic girdle pain and how this affects women psychologically and emotionally. **Method:** A systematic review and meta-synthesis of the experiences of pregnancy related pelvic girdle pain was conducted for qualitative studies dated between 2005 and 2016. Predefined terms were used to search nine central databases and hand searches of two reference lists of identified studies were carried out. **Findings:** 614 records were identified, eight studies met the inclusion criteria for review. Pain from pelvic girdle pain impacted on women's daily lives both at home and the workplace. This had a negative emotional and psychological impact on women as it took away their feeling of independence. Women reported feelings of frustration, guilt, irritability and upset at being unable to carry out their normal roles. Pelvic girdle pain also affected the women's sense of identity and ability to care for their children. **Conclusions and Implications for Practice:** Health professionals working with pregnant and postnatal women need to be aware of the anger,

frustration and negative emotions resulting from PGP. These women may become socially isolated and there is a risk they could abuse analgesics in attempt to manage the pain especially if they do not have the social support. For women with young children, it is important to be aware of safety issues they face with carrying babies and controlling toddlers. It is therefore important that health professionals recognise PGP as a serious health issue, approach this condition sensitively and refer to appropriate treatment as soon as PGP is suspected.

Keywords: Pregnancy, Pelvic Girdle Pain, Systematic Review, Psychological, Emotional, Qualitative evidence synthesis

Highlights

- Pregnancy related pelvic girdle pain negatively impacts daily life for women
- Pain from pelvic girdle pain disrupts the mother-child(ren) relationship
- Women suffer from negative emotional and psychological effects due to pain.
- The women are unprepared for the pain which dominates their lives
- Pelvic girdle pain affects all the family

Abbreviations

PGP – Pelvic Girdle Pain

SPD - Symphysis Pubis Dysfunction

LBP – Lower Back Pain

LPP – Lumbopelvic Pain

Women's Experiences of Pregnancy Related Pelvic Girdle Pain: A Systematic Review**Introduction**

Pregnancy related Pelvic Girdle Pain (PGP) is not generally regarded as a serious pregnancy complication or life threatening condition. It is often confused with Lower Back Pain (LBP) (Liddle and Pennick, 2015) and has been considered a normal part of pregnancy (Pierce et al., 2012). As a result, it can be overlooked or dismissed by healthcare professionals as they focus on what they consider to be more serious conditions (Wellock and Crichton, 2007a). Despite this, PGP can have negative psychological effects on the mother and her family as she becomes unable to carry out daily tasks and social activities. A lack of awareness of the detriment caused by this condition can result in the poor management of PGP (Candelier et al., 2010).

PGP (previously known as Symphysis Pubis Dysfunction (SPD)) is a condition affecting the sacroiliac joints and the symphysis pubis in the pelvis, causing considerable pain that can affect women's mobility and functioning both during and after pregnancy (Pelvic Partnership, n.d.). PGP can appear at any stage during pregnancy and it is estimated that between 14-22% of women experience serious pain during pregnancy and approximately 7% of those women will still experience pain postnatally (Larsen et al., 1999; Wu et al., 2004). Symptoms often occur after the woman has been physically active or has slipped into an awkward position (Fishburn and Cooper, 2015). PGP was previously thought to be caused by the pregnancy hormone relaxin and would therefore resolve itself at birth (MacLennan et al., 1986), however more recent research has identified that there is a poor relationship between relaxin and PGP (Aldabe et al., 2012a). It is more likely that PGP is of a biomechanical origin (Damen et al.,

2001) which also affects the myofascial structures around the sacroiliac joints and the symphysis pubis (Verstraete et al., 2013). The main risk factors for developing PGP are a history of lower back pain, previous trauma to the pelvis or previously given birth (Albert et al, 2006; Vleeming et al., 2008).

Several terms have been used to describe pregnancy related low back pain and PGP, which has created confusion. In response, Wu et al. (2004) proposed that two different types of back pain occur during pregnancy; PGP and Lower Back Pain (LBP). Together PGP and LBP come under the umbrella term Lumbopelvic Pain (LPP). The 2008 European guidelines for the diagnosis and treatment of PGP (Vleeming et al., 2008), consider PGP to be more painful than LBP, intermittent and specific to certain movements (Vermani et al., 2010). Pain can occur around the lower back and/or the symphysis area and this affects everyday activities such as walking, bending and climbing stairs. European guidelines recommend that PGP is diagnosed using the active straight leg raise (ASLR) functional test (Vleeming et al., 2008).

For some women the impact of PGP is severe. The pain from PGP, reduces mobility and consequently reduces the women's quality of life. Robinson et al. (2006) found that seven percent of pregnant women required the use of crutches and 15% were regularly woken at night from pain when turning over in bed. In extreme cases women can end up house-bound, bed-bound and require the use of a wheelchair (Fishburn and Cooper, 2015). PGP can also affect the ability to function in the work place. As a result there is an increased level of sickness absence in working women with PGP (Malmqvist et al., 2015; Mogren, 2006). Gutke et al. (2006) found that pregnant women with PGP took significantly more sick leave than pregnant women with only LBP.

The emotional impact of PGP, due to the resulting pain and disability, can be high and many pregnant women with PGP feel that they are not taken seriously by healthcare professionals (Mogren et al., 2010; Wellock and Crichton, 2007b). Qualitative studies investigating the experience of PGP have uncovered feelings of frustration and helplessness (Crichton and Wellock, 2008), anxiety and worry about the birth (Elden et al., 2014) and social and psychological challenges especially for those who continue to suffer from PGP after the birth (Engeset et al., 2014). For women who have young children, it can affect their ability to carry out normal child caring duties. This can lead to feelings of guilt for being a burden to others (Persson et al., 2013). PGP can also affect how women feel towards subsequent pregnancies as they worry how they will manage with a small child (Wuytack et al., 2015).

Since 2003, systematic reviews have been carried out on treatment interventions for LBP and pelvic pain during pregnancy (Liddle and Pennick, 2015), physical therapies for pregnancy related LBP and PGP (Stuge et al., 2003; Ferreira and Alburquerque-Sendín, 2013), complimentary therapies (Ee et al., 2008; Close et al., 2014; Hall et al., 2016) core strength for PGP (Lillios and Young, 2012), the role of exercise in treating PGP (Boissonnault et al., 2012), relaxin levels (Aldabe et al., 2012a), PGP and altered motor control of the pelvis (Aldabe et al., 2012b), maternity support belts for PGP (Ho et al., 2004) and terminology (Wu et al. 2004). However, to date, no systematic reviews have explored the experiences of PGP and the associated psychological effects. Unlike quantitative research, qualitative research is able to uncover knowledge on a topic and ask questions such as ‘what’, ‘why’ and ‘how’ (Willig, 2013). Therefore a qualitative approach is most suited to exploring the experience of a health condition. A qualitative systematic review on the experience of PGP will help reviewers interested in qualitative PGP studies to easily find and interpret the relevant research (Thomas and Harden, 2008). The aim of this research was to identify all the

available qualitative studies since 2005 which provided an insight into women's experiences of pregnancy related PGP. The present review aimed to systematically pool findings across studies of the qualitative experiences of women affected by pregnancy related pelvic girdle pain and how this affects them both psychologically and emotionally.

Method

Search Strategy

A literature search was carried out in July 2016. Both published and unpublished studies were searched for using PsycInfo, Academic Search Complete, PubMed, Web of Science, BPS EBSCO Discovery Service, Google Scholar, Zetoc, ETHOS and Dart Europe. The British Journal of Midwifery and Evidence Based Midwifery were hand searched as the scoping search identified these journals containing the most appropriate papers. The reference lists of identified papers and websites searched. Individual authors were contacted to enquire of any related further unpublished research.

The following search criteria were applied to PsycInfo, Academic Search Complete, PubMed, Web of Science and BPS EBSCO Discovery Service; 1. ("Symphysis pubis dysfunction" OR "Pelvic Girdle Pain" OR "Pelvic Pain" OR "Lumbopelvic pain") AND ("pregnancy" OR "prenatal" OR "postnatal"); 2. 1# AND Experience; 3. 1# AND Psycho*; 4. 1# AND Coping; 5. 1# AND "Quality of Life". Within Google Scholar, the following exact phrases were searched for within the title of the article; 1. Pelvic Girdle Pain; 2. Symphysis pubis dysfunction; 3. Pelvic Pain; 4. Lumbopelvic Pain. Zetoc, ETHOS and Dart Europe used the following search terms in the primary search field; 1. "Pelvic Girdle Pain"; 2. "Pelvic Pain"; 3. "lumbopelvic pain"; 4. "Symphysis pubis dysfunction".

Inclusion/Exclusion criteria

The aim of this review was to search for published and unpublished research studies investigating the experiences of women suffering from pregnancy related PGP. Therefore studies that did not include women with PGP that started during pregnancy were excluded. Studies investigating PGP post pregnancy were included because women are often told that their symptoms will go after the birth, however, this is not always the case (Röst et al., 2006). Due to the nature of the research question, only qualitative studies were included as the scoping search showed that quantitative studies could not directly address the research question. Only studies that demonstrated the impact of PGP on women's lives and showed the emotional and psychological effects of PGP on women were included. Treatments, experience of the health care system and peer to peer support studies were excluded. Only papers from 2005 onwards were included due to confusion with distinguishing between LBP and PGP before this date and the change in terminology for PGP (Leadbetter et al., 2004; Wu et al., 2004). Exclusion criteria were: Studies that included men or children; studies including women that had not experienced pregnancy related PGP; reviews, discussions and quantitative studies; Studies published before 2005; and treatments, diagnostics and reports on experiences of the health care system. No language restrictions were implemented.

Selection Process

The first author carried out the initial screening of the titles and abstracts to provide a shortlist of studies. The full text for all short-listed studies were identified and screened by the first and second author and a discussion between the authors led to the agreement of eight papers that met the inclusion criteria to be included in the review.

Quality Assessment

The selected papers were assessed for their quality by the first author and reviewed by the second author using the Critical Appraisal Skills Programme (CASP) qualitative checklist (see <http://www.casp-uk.net>) with the purpose of assessing the appropriateness of the qualitative method for the research question.

Data Extraction and Meta-Synthesis

Data was extracted and analysed using a textual narrative synthesis (Lucas et al., 2007). The first step was to read and re-read the studies to develop a set of questions related to the aim of the review and the overall research question. This was achieved through the coding of the study results in the software package NVIVO 11. The questions were:

1. How did the PGP affect the women's daily life?
2. How did PGP affect the women's identity?
3. What were the effects on the women's mothering role?
4. What were the emotional and psychological effects of PGP?
5. How did the women cope with the pain?

The second step identified sub groups within the studies from the reading of the studies. In the third step study commentaries were produced in relation to the questions above and the study design. Finally conclusions on the similarities and differences were drawn across the studies.

Findings

The initial search generated 614 studies after deduplication. Sixteen studies were retrieved for full review. After the review process, a further eight studies were excluded (see figure 1. for selection process).

insert figure 1. About here

Four of the studies were not specific to PGP and included pregnant women with generic LBP, two studies solely focused on interactions with healthcare professionals and two studies focused on peer support.

No studies were excluded on the outcomes of the quality assessment as qualitative methods were considered appropriate for all the studies and their research questions. All the studies gave clear statements and aims of their research with appropriate recruitment strategies. Data was collected ethically and in ways which addressed the research questions. All the studies produced valuable research with clear statements of findings. It was not clear if Persson et al. (2013) analysed their data rigorously enough. It was not possible to tell if the relationship between the researchers and participants had been adequately considered in four studies (Crichton and Wellock, 2007; Elden et al., 2013, 2014; Shepherd, 2005). See table 1 for quality assessment results.

insert table 1 about here

Description of the included studies

Of the eight remaining studies, there were 92 participants in total. Two of the studies used the same participants (Crichton and Wellock, 2008; Wellock and Crichton, 2007a), but the data was analysed by different authors using different research questions. Participants were recruited from RCT trials of PGP treatments, a longitudinal cohort study or referrals from physiotherapists, midwives and hospital departments. The participants were a mixture of primiparous and multiparous women with one study containing only primiparous women (Wuytack et al., 2015). Overall the age range of the participants was from 18 to 42 years. Five studies included women with a wide age range, two studies did not report on the women's ages (Engeset et al., 2014; Shepherd, 2005) and one study had a narrow age band of 27 to 33 years (Persson et al., 2013). The educational and occupational backgrounds were only reported in half of the studies. No studies reported ethnicity details, however two stated there was a wide range of ethnic backgrounds among the participants (Shepherd, 2005; Wellock and Crichton, 2007a). Wuytack et al. (2015) did report the country of birth for each participant. Four studies reported that all participants lived with partners, the remaining did not discuss partner status. There were three English studies, three Swedish studies, one Norwegian and one Irish study. The studies were analysed using grounded theory, thematic analysis, qualitative content analysis, descriptive phenomenology and interpretive phenomenology. These descriptions are summarised in table 2 along with three sub-groups which were identified within the included studies. The experience of PGP during pregnancy or after the birth; data analysis method; and country of the study location.

insert table 2 about here

Meta-synthesis

Meta-synthesis uncovered five common themes among the pooled data set: The effect of PGP on daily life; the effect of PGP on identity; the effect of PGP on the mothering role; emotional and psychological effects of PGP; and coping with pain.

The effect of PGP on daily life

All the studies explored how PGP affected the women's daily lives. During pregnancy, women struggled to carry out general everyday tasks within the home including housework, cleaning and childcare. Findings were similar regardless of the country of study. Women were highly dependent on partners, family members and friends for help. Two studies reported how this extended to the women's personal hygiene (Shepherd, 2005; Crichton and Wellock, 2008). For example, one woman was unable to climb the stairs for clean clothes and another struggled to reach the toilet on time (Crichton and Wellock, 2008). After the birth, women reported struggling with housework. Some women felt their only option was to struggle on with as much pain as they could bear especially if there was no one around to help (Wuytack et al. 2015). Six studies reported how PGP affected the women's life in the workplace. During pregnancy, women found it difficult to maintain their usual standard of work as they felt exhausted from the pain. Some women had to make adjustments to their work and/or reduced their hours. Others had no other choice but to go on sick leave (Crichton and Wellock, 2008; Shepherd, 2005) which they found hard to adjust to (Persson et al., 2013) and this created an extra financial pressure for the women. In the workplace some women found co-workers sympathetic to their suffering, however others felt under pressure to prove they were not lazy (Elden et al., 2013, 2014). Post pregnancy, women were concerned about how they would manage when they returned to work (Wuytack et al., 2015) and others found that employers did not understand their pain (Engeset et al., 2014). Regardless of country of study, all women were dependent on others and they found this very

frustrating. In the workplace, the studies from Scandinavia reported more negative experiences and concerns about PGP being accepted as legitimate reason for taking sick leave (Elden et al., 2013, 2014; Engeset et al., 2014). However, two of the English studies reported that taking sick leave for PGP created financial pressure due to loss of income (Crichton and Wellock, 2008; Shepherd, 2005).

The effect of PGP on identity

Changes in the women's lives often impacted on their identity and self-image. During pregnancy, three studies discussed how PGP had an impact on the women's identities. The effects on professional identity were similar in both Sweden and England where the studies took place. Only one study discussed identity as a disabled person (Crichton and Wellock, 2008). Where work played a significant role in a woman's life, they felt a loss of professional identity from taking sick leave or reducing their hours (Elden et al., 2013; Persson et al., 2013). They often felt bored at home and missed the social interactions in the work place. Some women were upset that they could no longer contribute to the household income and missed carrying out their professional work (Crichton and Wellock, 2008). The effect of PGP also affected the women's identity as a mother and a wife or partner as they could no longer carry out their usual household roles (Elden et al., 2013), instead they now identified themselves as disabled people (Crichton and Wellock, 2008).

The effects of PGP on the mothering role

Although the effect of PGP on the identity as a mother was only explicitly identified in two studies (Crichton and Wellock, 2008; Elden et al., 2013), all the studies discussed how the women struggled to carry out their mothering roles in the way they wanted to. During pregnancy, women who already had children felt guilty for being unable to interact with their

children (Elden et al., 2013; Shepherd, 2005) and be a “proper mother” (Crichton and Wellock, 2008; Persson et al., 2013). Young children struggled to understand why their mothers could not play with them which affected the mother - child relationship (Elden et al., 2013, 2014; Wellock and Crichton, 2007a). PGP made it difficult for the mothers to supervise young children in the process of toilet training and they felt as if all their progress was being undone (Crichton and Wellock, 2008). Safety was another concern as the women worried about not being able to catch or lift run-away toddlers (Persson et al., 2013), or having an accident on the stairs (Shepherd, 2005). Safety was also an issue for women after pregnancy as they worried about dropping their babies due to pain (Wuytack et al., 2015). Some women struggled to lift their babies just after the birth (Crichton and Wellock, 2008). Women found it difficult to play with their babies (Wuytack et al., 2015) and these reduced interactions led to concerns about mother-child bonding (Engeset et al., 2014). The lack of bonding and being able to be a “proper mother” affected many of the women’s mental states both during and after pregnancy.

The emotional and psychological effects of PGP

All the studies demonstrated that the cumulative result of pain, disability and the changing roles and identity of the women led to many negative emotional and psychological effects. During pregnancy women experienced a lot of frustration and embarrassment for having to rely on others for help when they were used to being independent, able-bodied women (Elden et al., 2013; Crichton and Wellock, 2008). This was in both personal and professional roles (Persson et al., 2013) and regardless of the country of study. Being unable to do everyday activities they used to take for granted made some women angry and emotional (Elden et al., 2014; Shepherd, 2005). Guilt or disappointment was sometimes felt for not enjoying pregnancy (Elden et al., 2014; Persson et al., 2013). Pain disrupted many of the women’s

sleep making them irritable (Persson et al., 2013) and close to tears (Elden et al., 2014). In a couple of severe cases the women threatened to self-harm resulting in the researchers having to intervene (Wellock and Crichton, 2007a). Several women believed that PGP was the underlying cause of their pre or post-natal depression (Elden et al., 2014; Shepherd, 2005). PGP pain made some women fearful for the birth as they did not think they could cope with two sets of pain (Shepherd, 2005). Post-natal women were surprised to still have the pain as they were told it would go away after the birth (Wuytack et al., 2015). Both Engeset et al., (2014) and Wuytack et al. (2015) found that the continuous pain often contributed to low moods which only lifted when the women thought the pain could be subsiding. The low moods and lack of interactions with their children due to the pain affected the mother - child relationship making the women feel guilty for not fulfilling their children's needs (Wuytack et al., 2015).

Coping with pain

Every study discussed the topic of pain and six studies identified pain explicitly as a theme. During pregnancy pain dominated the women's lives (Elden et al., 2014; Wellock and Crichton, 2007a). They felt unprepared for the pain (Persson et al., 2013) and it left them feeling exhausted (Elden et al., 2014; Persson et al., 2013; Shepherd, 2005), powerless and out of control (Crichton and Wellock, 2008; Elden et al., 2013; Wellock and Crichton, 2007a). Coping with the pain was difficult as they had a limited choice of analgesia and the support belts often did not work (Shepherd, 2005; Wellock and Crichton, 2007a). Some women took more than the recommended doses of analgesia in an attempt to reduce the pain (Wellock and Crichton, 2007a). Lifestyle changes were the only way to cope and this meant planning well in advance and relying on others for support (Persson et al., 2013; Shepherd, 2005). Elden et al. (2013) found that the women in their study only kept company of

supportive friends and discarded those who did not understand. Post-natal women were also exhausted and psychologically stressed from struggling to cope with the pain (Engeset et al., 2014). Wuytack et al., (2015) found that the women felt they had no choice but to put up with the pain. The women in both studies thought it would have been easier to cope if they had been given more information after the birth. Other coping strategies were planning well in advance, like the women during pregnancy, and relying on others for help where possible. If the pain was severe, they avoided leaving the house (Wuytack et al., 2015).

Discussion

All eight studies included in this review identified that the pain from PGP had a major impact on all of the women's lives and their families. Everyday life both at home and at work was affected. The women could not carry out their normal domestic roles and were dependent on others. It was particularly hard on those with young children as the children did not understand their mother's pain. In addition, some women continued to suffer after delivery of their baby, even though they were told PGP would resolve itself after the birth. In the workplace, women had to adapt and rely on the support of colleagues, if this was not possible they had no choice but to go on sick leave. Overall, the emotional and psychological impact on all of the women was great as previously they were able bodied independent women who felt frustrated at their lack of mobility and felt guilty they could not carry out their normal life roles.

The effect of pain on daily life and becoming dependent on others can be seen in other pain studies. Richardson, Nio Ong and Sim (2007) found that chronic pain sufferers relied on family members for practical support. Similar findings were identified in those with chronic

back pain (Strunin and Boden, 2004). Three studies showed the impact of pain on identity. A review of qualitative studies by Osborn and Rodham (2010) identified that pain affected people's sense of self and identity and they felt detached from the person they had become.

All the studies showed how PGP impacted on the women's mothering roles and the guilt they felt for being unable to fulfil their childcare duties. When the mothering role is affected by disability it can lead to feelings of guilt and frustration in the mother (Farber, 2000; Shpigelman, 2015). Disabled women can feel judged for becoming a mother because they are considered to be unable to care for their children properly (Grue and Laerum, 2002; Prilleltensky, 2003).

All the studies identified that the pain from PGP led to negative emotional and psychological effects such as low mood. Fears were greater around the birth due to extra pain from PGP (Elden et al. 2014; Shepherd, 2005; Crichton & Wellock, 2008). Close et al. (2016) identified similar findings in a qualitative study on LBP in pregnant women and Gukte et al. (2007) found that women with LBP in pregnancy were at a greater risk of postpartum depression. Some women tried to cope by using analgesics and a few took more than recommended creating a risk to the unborn child. Similar findings have been found in Sinclair et al.'s (2014) study of women with LBP in pregnancy.

No studies were excluded after the quality assessment as there is still debate as to whether this is appropriate for qualitative studies and there are no clear rules for eliminating studies in qualitative systematic reviews (Dixon-Woods et al., 2006). In addition, assessing reliability, validity and generalisability of studies is based on quantitative research methods and they do not always work well with qualitative studies (Silverman, 2011). Alternatively it has been

suggested that identifying the qualities of sensitivity to context; commitment and rigour; transparency and coherence; impact and importance are more relevant (Yardley, 2000).

All the studies carried out purposeful sampling to confirm that all targeted participants were clinically diagnosed with PGP. Six studies carried out further testing for PGP if there was any doubt about the diagnosis. Ethical approval was obtained for each study. All the studies demonstrated some level of impact and importance as each study demonstrated that PGP and the pain it causes has a physical and emotional impact on the women's lives.

Each study collected data using open-ended, in-depth interviews which were appropriate for the four different qualitative analytical approaches (grounded theory, thematic analysis, phenomenology and content analysis) used in the studies and demonstrated coherence in study design. Sensitivity to social context was taken into account in all the studies as the interview locations were considered important by the authors. This could affect the answers given by the participants. The heterogeneity of the participants in each study varied in terms of age range, socio-economic background, educational level and ethnicity. The number of participants in each study ranged from five (Engeset et al., 2014) to twenty eight (Crichton & Wellock, 2008; Wellock & Crichton, 2007). Engeset et al. (2014) did not state the age range, ethnicity or socio-economic status of the participants. This information would have improved the sensitivity to context in their research. Shepherd (2005) also did not report on the age range though she does state a variety of ethnic backgrounds and that English was not the first language of some women. The participant age range in Persson et al. (2013) was narrow, 27 to 33 years, however they did demonstrate a range of occupational and educational backgrounds. All the studies collected data from both primiparous and multiparous women except for Wuytack et al. (2015) who only include primiparous women.

In considering the strengths and weaknesses of this review, most of the participants lived with partners so the experience of single mothers is not explicitly reported. Partner status would have affected the level of the women's support. All the studies took place in four Western European countries in which women are able to be independent and are accepted in professional roles. The women also may have had less social support from extended family which is normal in many other countries. Therefore findings are culturally embedded. In addition, it is unusual not to have any US based studies. Qualitative studies naturally have lower numbers of participants than quantitative studies so it cannot be assumed that all women with PGP will experience the findings in this review. However some quantitative studies in this area have found it difficult to recruit large numbers of women with clinically diagnosed PGP (Elden et al., 2016; Gausel et al., 2014). By applying a textual narrative synthesis to the findings of these studies the review has been able to identify similarities and differences within the studies. The textual narrative synthesis revealed that all eight studies identified how the pain of PGP affected all the women's daily lives and had a negative emotional and psychological impact. Using a textual narrative synthesis has also helped to keep the heterogeneity of the studies and showed that some women feel that their identity changes particularly in terms of professional identity and identity as a "proper mother". Other meta-synthesis approaches such as thematic synthesis (Thomas and Harden, 2008) and meta-ethnography (Noblit and Hare, 1988) would lose heterogeneity through the generation of new theory. However it would be interesting to carry out a comparison with one of these methods.

In conclusion, this review has systematically explored the experiences of women affected by pregnancy related pelvic girdle pain. The studies in this review provided detailed information about the women's experiences of daily life with PGP and how this affected them

emotionally and psychologically. All the studies demonstrated how PGP affected their mothering role, the negative emotional and psychological effect of PGP and how the women coped with the pain of PGP.

This meta-synthesis puts a spotlight on the reasons why PGP should be recognised as a serious health issue. Health professionals working with pregnant and postnatal women need to be aware of the anger, frustration and negative emotions women suffering with PGP may have. In addition, the women are likely to be tired and irritable as a result of the pain. These women may be unhappy identifying as a disabled person and may become socially isolated. Financial pressure due to being unable to work may add to their emotional distress. If the women have young children it is important to be aware of safety issues they face with carrying babies and controlling toddlers. Young children will not understand their mother's pain and reduced interaction may have a negative effect on the children.

The women may not have others to rely on for help and therefore feel that they have to put up with as much pain as they can bear to carry out essential tasks. Coping with this pain could put the women at risk of abusing analgesics which can be dangerous especially in pregnancy. It is therefore important that health professionals approach this condition sensitively and refer to appropriate treatment as soon as PGP is suspected.

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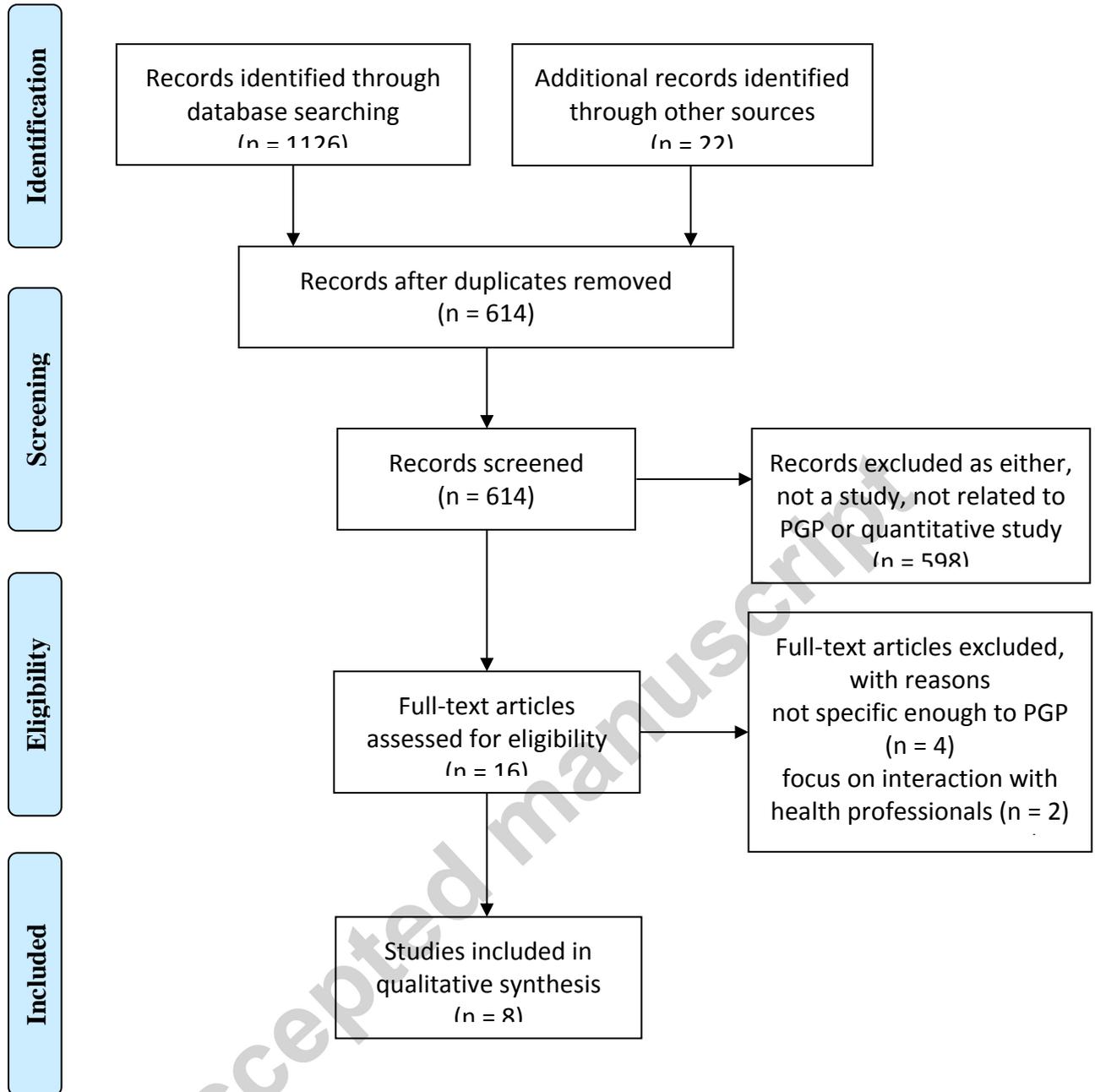
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Figure 1: Selection Process



Colour as in standard PRISMA flow chart

			their analysis on a theory							
Persson et al 2013	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Engeset et al 2014	Yes	Yes	Yes – however they did not discuss the theory behind this approach and justify their choice.	Yes						

Table 2: Summary of findings of included studies

Study	Location	Aim	Data analysis	Participants	The experience of PGP: Key Findings
Persson et al. 2013	Sweden	Investigate experiences of women living with PGP in pregnancy.	Interviews analysed with Grounded Theory.	Hospital outpatient clinic. N=9 (27-33 years) 5 university educated; 4 high school educated. Primigravida and multigravida women living with partner.	Unprepared for the pain and worried it would never go away. Reliant on practical and psychological support. Household chores and childcare difficult. Personal and professional relationships were affected. Loss of professional identity. Disrupted sleep led to negative moods. Loss of independence affected self-esteem. Felt anxious and frustrated by PGP. Only way to cope was to rely on others and plan well in advance. Childcare struggles and feelings they were not being a proper mother.
Engeset et al. 2014	Southern Norway	Explore how women with post-partum PGP experience living with PGP pain and its influence on daily life, challenges encountered concerning physical, psychological	Interviews analysed with a Phenomenological-hermeneutical design.	Physiotherapists and a hospital department. N=5 Mix of high school & university educated. Primigravida and multigravida women all living with partner.	Disabilities created pain and mental stress and their health problems affected families and friends. Exhausted from the pain and disability affected social interactions. Required help with household chores and lacked physical activity. Missed hobbies and social activities. Lack of mobility affected moods. Coping strategies were good

Study	Location	Aim	Data analysis	Participants	The experience of PGP: Key Findings
		& social function.			planning, delegation and reduced activity levels. Some colleagues and employers did not understand. Relationships changed and children were affected by mother's lack of interaction and activity. Low mood affected relationships with children. Some had hope for the future.
Elden et al. 2014	Sweden	Explore and describe pregnant women's experiences of severe PGP physically and in regards to the health care system.	Interviews analysed with Qualitative Content Analysis.	RCT study on treatment for PGP. N =27 (21-38 years, mean 31 years). Primigravida and multigravida women all living with partner.	Felt unprepared and lacked information on PGP. Felt alone in suffering. Unable to take their bodies for granted. Frustrated by immobility of PGP and missed being physically active. Concerns about the birth. Sleep affected leaving them exhausted. Felt guilty for being unhappy in pregnancy. Some felt depressed resulting in difficulty bonding with children. Felt insulted by health professionals' lack of support and understanding. PGP made working difficult. Worried that PGP was not a legitimate reason for sick leave. PGP changed their self-perception.
Wellok & Crichton 2007	North-west England	Explore pregnant women's experiences of SPD and its effect on their quality of life during and up to 6 weeks post-partum.	Interviews analysed with Heideggerian phenomenological approach.	Referrals from midwives and physiotherapy departments. N=28 aged between 18-42 years Primigravida and multigravida women Range of cultural & SES backgrounds.	Pain described using metaphors, facial expressions and sound. Felt out of control and powerless. Some coped by using pain medication and a few took more than prescribed dosage. Relied on partners, family and friends for support. Difficult for those without a partner. Felt guilty for being unable to do household chores or look after young children. Affected personal relationships and young children did not understand their mother's pain.

Study	Location	Aim	Data analysis	Participants	The experience of PGP: Key Findings
Crichton & Wellock 2008	North-west England	Explore the disabling effects of SPD on the lives of pregnancy and newly-delivered women and their families.	Interviews analysed with a Heideggerian phenomenological approach.	Referrals from midwives & physiotherapy departments. N=28 aged between 18-42 years. Primigravida & multigravida women. Range of cultural & SES backgrounds.	Created anxiety for some women. Lost identity as a mother or wife. Identity now as a dependent disabled person. Could not do everyday activities and household duties, felt powerless, guilty, angry and tearful. Worried about double pain in childbirth. Professional identity in the workplace affected resulting in financial impact on the family. Struggled to look after their children and upset not being able to meet child's needs, felt mother-child bond was being lost. Personal relationships affected. Feared another pregnancy.
Shepherd 2005	England	Describe SPD (PGP) from a woman's perspective of living with the condition.	Interviews analysed with a Heideggerian phenomenological approach.	Referrals from midwives and physiotherapists. N=5. Ages unspecified. Primigravida and multigravida women.	Pain affected daily activities and was physically and emotionally exhausting. Fear of PGP exacerbating labour pain. Decisions towards birth and breastfeeding affected. Pain changed attitudes towards subsequent pregnancies. Coped by relying on help from partners, friends and family. Felt anger, guilt and frustration. Some felt anxious about lack of ability to do household chores. Some felt depressed pre and postnatally. Pain caused conflict in work and home relationships. Inability to work created financial pressure.
Wuytack et al. 2015	Ireland	Explore primiparous women's experience of persistent PGP and its impact on their lives postpartum,	Interviews analysed with Thematic analysis.	MAMMI longitudinal survey based cohort study. =23 (aged 18+). Primigravida women. Majority university	Felt they had to endure pain and get on with daily life especially if no one around to help. In severe pain did not leave the house. Childcare was difficult and feared dropping baby due to pain. Felt old and tired.

Study	Location	Aim	Data analysis	Participants	The experience of PGP: Key Findings
		including caring for their infant and their parental role.		educated.	Concerned for future when returning to work and when child was mobile. Lack of mobility caused frustration and affected ability to play with children. Moods negatively affected. Surprised pain did not go away at birth. Would have liked more help and information. Felt under pressure to reduce pain to return to work and/or have another child.
Elden et al. 2013	Sweden	Describe pregnant women's experiences of living with PGP related to daily life.	Interviews analysed with Qualitative Content Analysis.	Another RCT study on treatment for PGP. N =27 (21-38 years, mean 27 years). Primigravida and multigravida women all living with partner.	Felt out of control and socially isolated. Pain was difficult to cope with and felt judged by others. Preferred supportive friends and discarded those who did not understand. Childcare and playing with children was difficult. Toddlers got angry towards their mothers. Family roles changes with partners and older children doing household chores. Frustrating and embarrassing for the women. Moods and personal relationships negatively affected. Lost professional identity and worried about how employer would react. Social interaction missed. Being at home was boring. Reconsidered subsequent pregnancies.