## Title

Effectiveness of physical therapy interventions for pregnancy-related pelvic girdle pain (PEDro synthesis)

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## Background

Pelvic girdle pain (PGP) is often reported during and after pregnancy and the exact cause(s) is not clear. A wide variety of physical therapy interventions such as exercise/manual therapies, use of pelvic belts, electrotherapeutic agents and patient education are presently used for the treatment of pregnancy-related PGP[1]. These interventions are continuing to be used, whereby evidence-informed decisions may not be followed.

## Aim

The aim of the systematic review was to investigate the effectiveness of physiotherapy interventions for the treatment of postpartum low back pain (LBP) and PGP.

## Searches and inclusion criteria

The searches were conducted using eight electronic databases including PubMed, Medline, SciELO, LILACS, Cochrane Collaboration Database, SCIRUS, Scopus, and the Physiotherapy Evidence Database (PEDro). The key words used were obtained from the Medical Subject Headings (MeSH), which included LBP, physiotherapy, postpartum period and pregnancy. Corresponding terms of these key words in Portuguese and Spanish languages were also included. Studies published in peer-reviewed journals were only included with the

following limits set: 1) Randomized controlled trials (RCTs') published between 1985 and 2010, written in any language, and 2) Used at least one outcome measure (e.g., pain intensity, disability).

**Interventions**

The focus mainly in most of the studies (*n*=5) was on specific stabilization exercises. These exercises were implemented either at the physiotherapy setting (*n*=4) or as a home-training programme (*n*=1). Two studies also used brief self-management and fear-avoidance techniques. A sole study used a videotape to instruct on the training of the trunk muscles.

**Main outcomes**

Studies included pain intensity (PI), disability (functional status), fear-avoidance behaviour, quality of life (QoL), fatigue, global perceived recovery (GPR) and pelvic pain provocation tests, either as primary or secondary outcome measures.

**Statistical methods**

A qualitative synthesis approach has been adopted, thereby presenting results in a structured summary format.

**Results**

Of the 105 articles, which met the inclusion criteria, only six RCTs' were included. These were carried out in the Netherlands (*n*=3), Norway (*n*=2) and Sweden (*n*=1). The sample

sizes ranged from 44 to 128, thereby 341 patients were included. Women in all the studies were included in the post-pregnancy period, with the onset of LBP and/or PGP during pregnancy or following delivery (postpartum). The mean age of all participants was 31.6 (*SD*=3.6) years, and the follow-up period in the studies varied from 3 months to 2 years postpartum. The methodological quality of the included studies was rated using the PEDro scale, and the scores ranged from 5/10 to 8/10, thus indicating a low risk of bias.

The key outcomes of PI (2/6)* and disability (4/5)* demonstrated differences (improvements) between the experimental and control groups. Meanwhile, the GPR outcome (3/3)* did not reveal differences between the groups. Overall, conflicting results have been found for a given outcome measure between the trials, and in some instances between the follow-up period within the same study.

**Limitations**

The review did not explicitly differentiate between LBP and PGP patients. A meta-analysis was not conducted for reasons not reported, therefore, lacking in the quantitative results. This is despite that only RCTs' were included in the review. However, the trials were heterogeneous in terms of follow-up period, outcome measures/tools used, and in the protocol for interventions (e.g. way: supervised vs home training; period: 8 vs 20 weeks & model: biopsychosocial vs biomedical) implemented. Using different key terms, inclusion criteria, language and publication year as limits set, while searching databases can all be reasons leading to a retrieval of a different set of articles, thereby subsequently resulting in a different set of results. This is evident when comparisons are made to a systematic

review[2] conducted with almost a similar purpose and design to this review. All the trials included in the review have been conducted in the European countries. Therefore, the generalization of results to similar cohorts in other countries outside Europe may not be possible due to differences in the physical characteristics. Out of the 6 studies included in the review, only 4 can be counted as primary studies. Stuge *et al*[3] and Bastiaenen *et a*l[4] had each conducted a study, but reported their findings in two articles, thus appearing as separate studies.

**Clinical implications**

This review reported that presently the effectiveness of physical therapy interventions in pregnancy-related PGP is inconclusive, which is also supported by another review[2]. Using the GRADE approach, the current review found that the quality of evidence ranged from 'very low' to 'moderate' for the outcomes evaluated, with the only exception of PI, which was found to have 'high' evidence. There is currently a lack of well-designed studies to demonstrate high quality of evidence related to physical therapy interventions for pregnancy-related PGP[5, 6, 7]. A review protocol using a rigorous methodology to identify the best possible evidence in this research area has been recently published in the Cochrane database[1].

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## Footnotes

*Figures in parentheses indicate: the number (*n*) of studies, which found differences for that specific outcome measure between the groups/number of studies (*n*), which included that particular outcome measure.

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