

The AfterBabyBodyStudy

Muscular changes, exercising, and activity limitations and their associations with pelvic girdle pain and urinary incontinence in the postpartum period

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentlig försvaras i hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, torsdagen, den 14 december, klockan 13:00

av

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Avhandlingen baseras på följande delarbeten

- I. Vesting, S, Fagevik Olsén, M, Gutke, A, Rembeck, G, Larsson, MEH, 2021, Clinical assessment of pelvic floor and abdominal muscles 3 months post partum: an inter-rater reliability study. *BMJ Open*, 11(9), e049082. doi: 10.1136/ bmjopen-2021-049082.
- II. Vesting, S, Gutke, A, Fagevik Olsén, M, Praetorius Björk, M, Rembeck, G, Larsson, MEH, 2022, Can Clinical Postpartum Muscle Assessment Help Predict the Severity of Postpartum Pelvic Girdle Pain? - A Prospective Cohort Study, *Physical Therapy*, 103(1), pzac152. doi: 10.1093/ptj/pzac152
- III. Vesting, S, Gutke, A, Fagevik Olsén, M, Rembeck, G, Larsson, MEH, 2023. The impact of exercising on pelvic symptom severity, pelvic floor muscle strength and diastasis recti abdominis after pregnancy: a longitudinal prospective cohort study. *Physical Therapy*, 103. In press.
- IV. Vesting, S, Rembeck, G, Fagevik Olsén, M, Gutke, A, Larsson MEH. Surprised by the transition to an unknown body: Quantitative and qualitative aspects of physical changes and activity limitations during the first year postpartum. In manuscript

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ABSTRACT

Aim: Pregnancy and childbirth can lead to several symptoms, changes in the pelvic floor muscles and a diastasis recti abdominis (DRA). This thesis aimed to assess and explore stress urinary incontinence, vaginal heaviness, pelvic girdle pain and muscular changes in the postpartum period, in relation to each other, and in relation to exercising, activity limitations and women's experiences.

Methods: This thesis comprises four papers based on a prospective longitudinal cohort study (n = 504) and a qualitative study (n = 14). The cohort study included questionnaires and clinical muscle assessments at 3, 6, 9 and 12 months postpartum, with double initial assessments (n = 222) to assess inter-rater reliability (Paper I). The questionnaires included measures to assess pelvic girdle pain (Papers II+III), stress urinary incontinence, vaginal heaviness and exercising (Paper III) and activity limitations (Paper IV). The qualitative study involved interviews regarding women's experiences of physical changes and recovery postpartum (Paper IV). These 14 women were not included in the cohort study.

Results: Good inter-rater reliability was shown for the assessment of maximal voluntary pelvic floor muscle contraction using vaginal palpation and for measuring DRA width with a caliper, but only fair inter-rater reliability for the assessment of pelvic floor muscle relaxation (Paper I). There were associations between weak pelvic floor muscles and DRA width ≥ 35 mm and increased pelvic girdle pain severity at 3 months postpartum. Participants with lower pelvic girdle pain severity showed no statistically significant decrease from 3 to 12 months postpartum (Paper II). Participants who engaged in low-impact exercise 2-4 times/week within the first 3 postpartum months experienced reduced pelvic girdle pain and stress urinary incontinence severity at 12 months compared to 3 months postpartum. Those who did not exercise experienced increased stress urinary incontinence at 12 months postpartum (Paper III). Women experienced activity limitations, e.g., running, exercising, and lifting/carrying, due to pain, vaginal heaviness, and urinary incontinence in the first 6 months. While most of these limitations were temporary, 41% of women continued to experience difficulties with running 12 months postpartum (Paper IV-cohort). The women were surprised by the physical changes postpartum. They expressed a need to understand whether these changes were permanent or temporary (Paper IV-interview).

Conclusion: Several symptoms and physical changes naturally diminish during the first year postpartum. However, urinary incontinence and pelvic girdle pain can result in activity limitations. Women can feel surprised and insecure about these physical changes and seek support and practical advice on how to manage them. Primary care physiotherapists could play an important role for women with persistent symptoms and activity limitations in assessing their pelvic floor and abdominal muscles, encouraging and adjusting exercise, and helping to restore function in muscle groups associated with pain and urinary incontinence.

Keywords: activity, clinical assessment, exercising, experience, pelvic floor disorders, pelvic girdle pain, physiotherapy, postpartum, primary health care, urinary incontinence, vaginal heaviness