

Research reviews

We are delighted to welcome several new members to the team, some of whom have written this edition's research reviews. Our thanks go to Sarah Papagiorcopulo (Gluppe *et al.* 2021), Rosie Harper (Ho *et al.* 2021), Ciara Devery (Kinno *et al.* 2021), Emily Elgar (Brandt 2021) and Karen Irons (Brennan *et al.* 2021) for their contributions.

A cross-sectional study by Gluppe *et al.* (2021) investigated the difference in abdominal muscle strength, pelvic floor dysfunction (PFD), and low back, pelvic girdle and abdominal pain in 72 women with and without diastasis recti abdominis (DRA). The outcome measures included dynamometry, the curl-up test, and validated questionnaires and indices.

The authors found a significantly higher prevalence of abdominal pain in women who had DRA. Their results also suggest that DRA may be associated with impaired abdominal strength. Interestingly, there was no difference in the prevalence and severity of PFD, or low back (LBP) and pelvic girdle pain between the two groups. Therefore, Gluppe *et al.* (2021) call into question the common belief that DRA can cause PFD, LBP and pelvic girdle pain, and recommend that physiotherapists should address this issue with caution.

Using both iOS and Android devices, Ho *et al.* (2021) conducted a systematic review of UK and Canadian app stores by exploring existing mobile health applications that support women in pelvic floor muscle training (PFMT). Of 139 apps identified, 20 were fully analysed using the Mobile App Rating Scale (MARS).

The authors found that the average overall quality score was 3.7 out of 5. The highest rated apps (scoring 4.1) were Kegel Trainer, myKegel, Pelvic Floor First, Squeezy and Tät. The highest- and lowest-rated characteristics of the apps were functionality and information, respectively.

Ho *et al.* (2021) comment on the high number of low-quality apps that are available to the public; Tät is the only one that has been tested in a clinical trial. The authors also discuss the importance of adherence features, which are more useful than specific exercise regimes in the context of regular PFMT for women. A recognized limitation in the study is the lack of an end-user experience measure in the 2015 version of the MARS tool.

A retrospective study by Kinno *et al.* (2021) investigated the association between overactive bladder (OAB) symptoms and pelvic organ mobility using dynamic magnetic resonance imaging (dMRI). The dMRI findings of 118 patients with prolapse and OAB were reviewed. The parameters included the position and mobility of the pelvic organs, pelvic organ support, and bladder outlet obstruction (i.e. urethral kinking).

The results suggest that levator ani impairment and apical compartment support defects are associated with the presence of OAB, which highlights the importance of providing support for level I structures during treatment. However, Kinno *et al.* (2021) found no link between the severity of OAB and the parameters evaluated by dMRI, which suggests that this problem may be affected by systemic factors.

The recognized limitations of this study include: dMRI being completed in supine; intra-abdominal pressure not being measured during the Valsalva manoeuvre; and the exclusion of patients with mild (< stage II) and severe (\geq stage III) pelvic organ prolapse at rest.

In a systematic literature review, Brandt (2021) proposes the use of the biopsychosocial model (BPSM) of care when treating PFD.

The author highlights several gaps and problems within the current evidence base:

- The existing research has a predominantly biomedical focus.
- Education is given within a framework of symptom reduction rather than psychological impact and behaviours.
- Few studies have recorded biomedical as well as social/emotional responses to treatment.
- The conclusions made are compartmentalized rather than conceptualized, which means that interaction is not appreciated.

Brandt (2021) points out that the influence of social or environmental factors is intentionally limited in research so as to increase validity, but this, in turn, limits the ability to integrate concepts.

Her recommendations are to:

- fill knowledge gaps across BPSM themes such as communication, cognitive, emotional and educational factors in order to balance our biomedical knowledge;

- consider the influence of patient–clinician interactions, especially consistency in the PFD terminology used with patients;
- consider the intersection between internal (e.g. aging) or external (e.g. social) factors on the experience of PFD and its treatment; and
- increase our understanding of the ideal learning environment for patients by considering their age, the impact of the symptoms of PFD and behaviour.

A meta-analysis by Brennan *et al.* (2021) utilized trials from a Cochrane review that examined perinatal PFMT for the prevention and treatment of urinary and faecal incontinence (UI and FI). The cost-effectiveness of different models of individual and group-based ante- and postnatal PFMT was then determined.

The results indicate that both group-based and individual antenatal PFMT significantly reduced postnatal UI. Furthermore, individual postnatal PFMT for the treatment and/or prevention of UI effectively reduced FI.

Group-based antenatal PFMT to prevent UI was the most cost-effective model of care. There were insufficient trials assessing group-based postnatal models. However, individual postnatal PFMT to treat UI was both clinically beneficial and cost-effective.

Brennan *et al.* (2021) recommend that all women should have the opportunity to attend

antenatal PFMT to prevent UI. However, they note that individual postnatal PFMT has the additional benefit of preventing or treating FI.

Research Reviews Team

References

- Brandt C. (2021) Physiotherapy and pelvic floor health within a contemporary biopsychosocial model of care: from research to education and clinical practice. *The South African Journal of Physiotherapy* **77** (1): 15348. DOI: 10.4102/sajp.v77i1.1538.
- Brennen R., Frawley H. C., Martin J. & Haines T. P. (2021) Group-based pelvic floor muscle training for all women during pregnancy is more cost-effective than postnatal training for women with urinary incontinence: cost-effectiveness analysis of a systematic review. *Journal of Physiotherapy* **67** (2), 105–114.
- Gluppe S., Engh M. E. & Bø K. (2021) Women with diastasis recti abdominis might have weaker abdominal muscles and more abdominal pain, but no higher prevalence of pelvic floor disorders, low back and pelvic girdle pain than women without diastasis recti abdominis. *Physiotherapy* **111** (June), 57–65.
- Ho L., Macnab A., Matsubara Y., *et al.* (2021) Rating of pelvic floor muscle training mobile applications for treatment of urinary incontinence in women. *Urology* **150** (April), 92–98.
- Kinno K., Sekido N., Takeuchi Y., *et al.* (2021) Association between overactive bladder and pelvic organ mobility as evaluated by dynamic magnetic resonance imaging. *Scientific Reports* **11** (1): 13726. DOI: 10.1038/s41598-021-93143-6.