

Research Space

Journal article

Scoping review: should physiotherapists recommend swimming to patients with low back pain and is further research indicated

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Innovations in Physiotherapy Database Submission

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Short Title: Scoping review: Should physiotherapists recommend swimming to patients with low back pain and is further research warranted?

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Location: South East

Purpose

It is common practice to suggest to patients with low back pain (LBP) to try swimming as a form of exercise but what evidence is this recommendation based upon and is there a need for further research? This scoping review was carried out to prepare and support a research proposal which will investigate whether swimming is beneficial for patients with LBP and whether swimming could target some of the comorbidities associated with LBP.

Approach

A search was carried out on the following databases; PubMed, SPORTdiscus, CINAHL, MEDLINE and AMED using the following keywords and combinations; swim*, back pain, aquatic, rehabilitation, hydrotherapy. The search was expanded by reviewing the reference list of the included studies, searching the grey literature and reviewing a recent Swim England report.

Outcomes

This scoping review included basic science research, correlational studies, RCTs, systematic reviews and research relevant to the delivery of swimming. Basic science research has found evidence that in water the muscles and spine may respond differently in terms of EMG activity [1] and changes in spinal stature [2] and evidence that older swimmers may have less postural sway [3] and this could be related to swimming targeting the core muscles. It has been found that load reduces at increasing depths of water due to buoyancy [4-5]. Pain research, using rodents, provides low level evidence that swimming may be able to target nociceptive, inflammatory and neuropathic pain and central sensitisation [6-10]. Correlational studies have found the incidence of low back pain (LBP) in swimmers is low when compared to other sports

[11-12]. There is some evidence that swimming may help with weight management [13-14]; variables include gender, water temperature and diet and that swimmers are less likely to take medication for mental health conditions [15]. The search identified no RCTs which have specifically investigated swimming and LBP. One small uncontrolled study was found, that is frequently cited in support of swimming for LBP; this study used a combination of swimming, aquatic and land based exercise and found improvements in physical scores [16]. Two systematic reviews and one meta-analysis were identified which concluded that aquatic exercise for LBP can reduce pain and improve function [17], however findings may not be transferable to swimming. The delivery aspect of treatment can be challenging; there are barriers to swimming and physical activity in the LBP population [18-20]. A patient and public involvement survey found that 88% of patients thought that swimming was 'good for low back pain' [21]. Unfortunately only 27% of adults are unable to swim a length and 53% of adults are unable to swim 4 lengths of a pool [22]. It is likely that behavioural change techniques, aimed at improving motivation, alongside education about pain management are required; in addition to financial and professional support. Existing swimming frameworks may need to be modified for patients with persistent LBP [23-24].

Cost and savings

Aquatic therapy is currently offered on the NHS and some patients can access aquatic exercise and swimming through exercise referral schemes. Due to significant gaps in the literature there is only low level evidence that funding should be directed to swimming and swimming lessons for patients with low back pain. In the future if swimming was found to be beneficial then teaching people new skills such as swimming that enables them not only to self-manage a long-term condition but also target co-morbidities could be more cost effective for the NHS.

Implications

In conclusion there is sufficient evidence presented in this scoping review to support undertaking research investigating whether swimming is beneficial for people with persistent low back pain. However due to the gaps in the evidence a multi-phase project is preferable in order that a swimming class can be developed as a rehabilitation modality, with involvement from all stakeholders, prior to testing in a clinical trial.

Top three learning points

- 1) There are many ways that research can be presented in a scoping review; there is currently no standardised approach.
- 2) Most swimming research involves competitive swimmers.
- 3) There have been no trials which have investigated whether swimming is a beneficial form of exercise and rehabilitation for people with low back pain

Additional notes

This work was presented as a poster at Physiotherapy UK 2019

Reference list

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PhD student profile page

<https://www.canterbury.ac.uk/social-and-applied-sciences/human-and-life-sciences/sport-and-exercise-sciences/research/phd-profiles/helen-oakes.aspx>

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