

# Effectiveness of a Pilates exercise intervention on perceived functional disability and pain associated with non-specific chronic low back pain.

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## INTRODUCTION

Non-specific low back pain (LBP) is a symptom of unknown cause affecting one third of the UK adult population. In 2013, the UK Government reported that back pain was the leading cause of long-term sickness and accounted for more than 15 million lost work days; with an estimated annual cost of £12.3 billion (NHS, 2015). Pilates based exercise is becoming increasingly incorporated to spinal rehabilitation, yet there is limited evidence on the effectiveness of the technique.

The aim of this study was to evaluate the effect of a 6-week Pilates based exercise programme on perceived functional disability and pain associated with non-specific chronic low back pain.

## METHOD

Thirteen participants (female=9, male=4; mean age: 57.4 ± 6.6 y and 50.4 ± 9.8 y, respectively) with chronic non-specific LBP (>12 weeks) were recruited to a wait-list controlled (WLC) trial. All participants were assigned to a 6-week WLC period and subsequently undertook one hour of a Pilates based exercise intervention (PI) twice a week for 6 weeks. Pilates exercises included spine stretch forward, single leg stretch, spine twist, shoulder bridge, rolling, the hundred, swimming and side kick. The exercise programme was delivered by a qualified Pilates instructor in a group exercise setting within a fitness facility.



Perceived functional disability and pain were assessed using the Oswestry functional disability questionnaire (ODQ; Taylor *et al.*, 1999) and visual analogue scale (VAS; Kelly, 2001), respectively. Differences between groups at baseline and after 6 weeks for ODQ and VAS were analysed using a paired samples *t*-test. Statistical significance was set at  $p < 0.05$ .

## RESULTS

Perceived functional disability scores (Figure 1) improved after 6 weeks of the PI compared to the control period (15.5 ± 9.8 vs. 22.0 ± 10.3;  $P < 0.01$ ). There was no statistically significant difference in pain scores (Figure 2) between the control and PI period (3.7 ± 1.9 cm vs. 2.7 ± 2.2 cm;  $P > 0.05$ ).

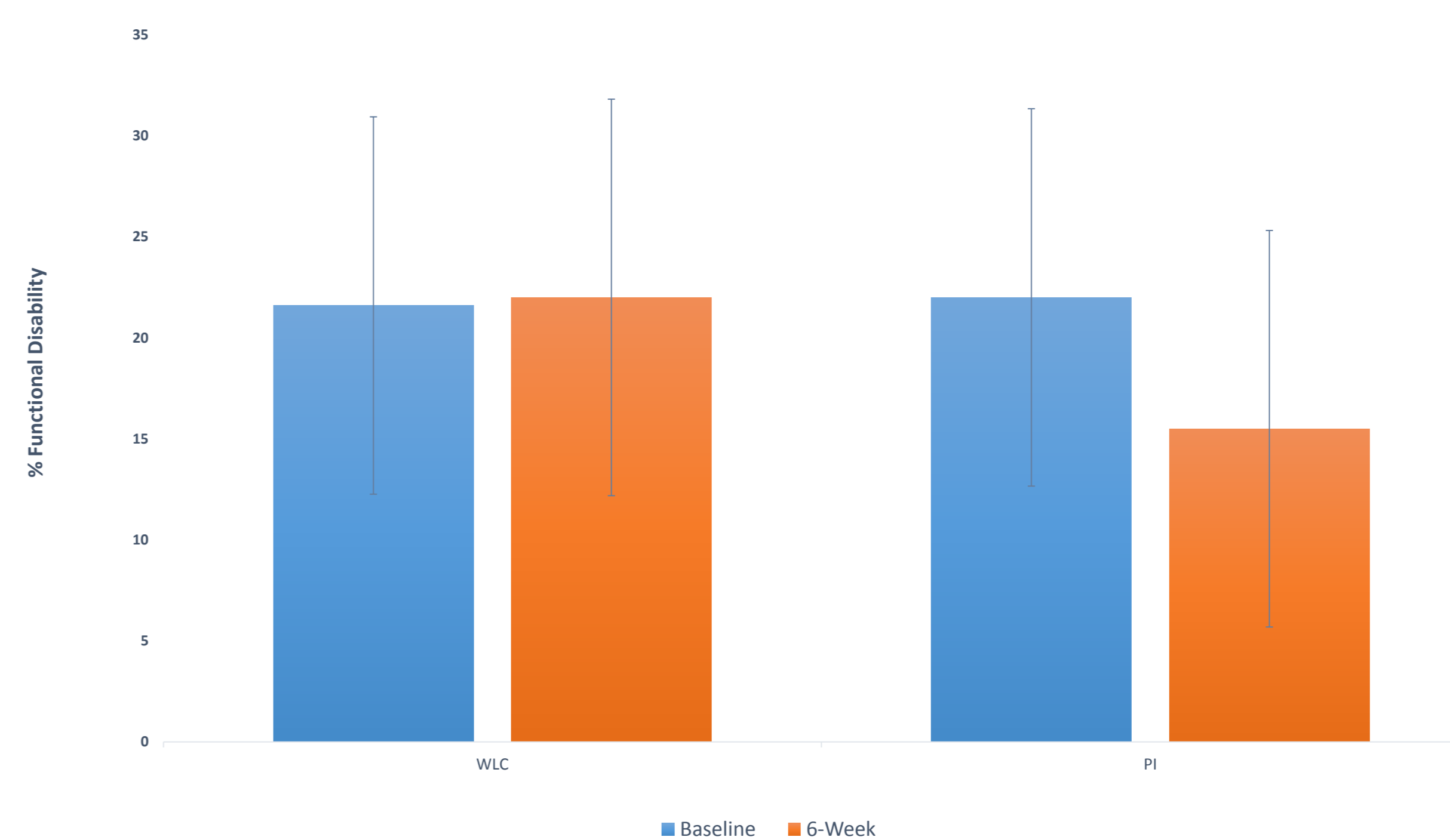


Figure 1. Mean ODQ Scores for Functional Disability

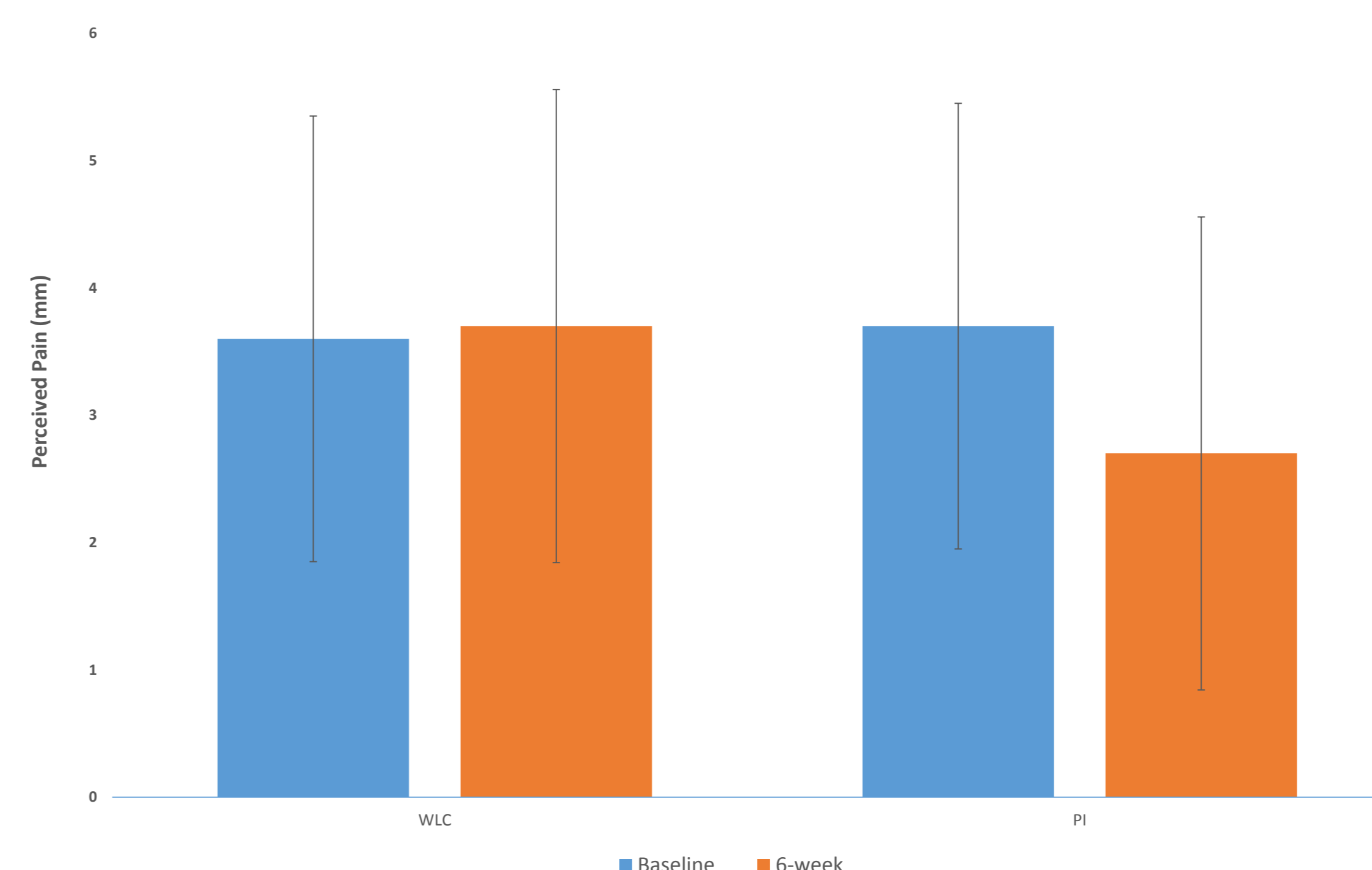


Figure 2. Mean VAS Scores for Perceived Pain

## DISCUSSION

A reduction of 29.5% in ODQ scores was observed in the PI group post-intervention. Participants' scores decreased from moderate to minimal disability (Davidson & Keating, 2002). These findings are comparable to those stated by Taylor *et al.* (2011) who observed a decrease of 13.5% after a 6-week Pilates intervention.

Perceived pain findings in this study contradict those of Bronfort *et al.* (2011) who reported significantly improved outcomes for patient-rated pain, however they used a 12-week supervised exercise programme.

## CONCLUSION

The findings of this study suggest that a 6-week PI is effective to reduce perceived functional disability but not pain in healthy adults experiencing non-specific LBP. Further research is needed to identify other physiological benefits for LBP sufferers.

## REFERENCES

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