

Abstract af David Christiansen og Per Kjærs studier

The smallest worthwhile effect of physiotherapy for neck, shoulder and low back pain: How low can we go?

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Background: Results from clinical trials have supported the use of physiotherapy (manual therapy and exercise) for neck, shoulder and low back pain, but methods to determine whether these observed treatment effects are of clinical significance is an ongoing topic of discussion. The smallest worthwhile effect (SWE) of an intervention is the smallest beneficial effect, taking into account the cost, potential side effects and inconveniences of that intervention, large enough to justify the use of the intervention in clinical practice.

Purpose: To determine and compare estimates of the SWE for physiotherapy for neck, shoulder and low back pain and to investigate the possible influence of socio demographic, clinical and physiological factors on these estimates.

Methods: The study was nested in a larger prospective cohort study of patients seeking physiotherapy for neck, shoulder or low back pain in 21 physiotherapy practices across Denmark in the period from January to June 2016. Patients who consented were contacted by telephone and a structured interview was performed before treatment was commenced. The benefit-harm-trade-off method was used to estimate the SWE for additional improvement by physiotherapy treatment in three outcomes; pain, disability and “time to recovery” for each patient, as compared to improvement that could occur as a result of natural recovery. To explore its possible influence, information on socio demographic, clinical and physiological factors was collected by a web-based questionnaire prior to the first consultation and electronic clinical recording sheets were completed by the treating physiotherapist. The distribution of estimates of the SWE for each outcome was calculated and compared with respect to pain location (neck, shoulder or low back). Possible influence of baseline characteristics and intake scores was examined by regression analyses.

Results: A total of 160 patients were included in the study (age 50.7±14.2, 56% female). The distributions of patients with respect to pain location were: neck 26%, shoulder 33%, and low back 41%. The median SWE for additional improvement on pain and disability was 20% (interquartile range [IQR] 10-30%) and median SWE for “time to recovery” was 10 days (IQR 7-14) over a period of six weeks. No significant differences in SWE estimates were observed with respect to pain location (neck, shoulder or low back). Adjusting for baseline characteristics and intake scores had no decisive impact on the results.

Conclusion(s): People with neck, shoulder and low back pain needs to see at least 20% additional improvement on pain and disability over natural recovery to consider the effect of physiotherapy to be worth its costs, potential side effects and inconveniences.

Implications: Findings from this study may guide clinicians and policy makers when interpreting findings from clinical trials, setting standards when monitoring clinical guidelines. It may also allow researchers to design trials, in similar health care systems to Denmark, sufficiently powered to detect effects that a typical patient seeking physiotherapy would consider large enough to be worthwhile.

Key-words: 1. research methodology 2. minimum clinical important differences 3. musculoskeletal pain

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Ethics approval: Findings from this study may guide clinicians and policy makers when interpreting findings from clinical trials, setting standards when monitoring clinical guidelines. It may also allow researchers to design trials, in similar health care systems to Denmark, sufficiently powered to detect effects that a typical patient seeking physiotherapy would consider large enough to be worthwhile.

Time in sports is not associated with low back pain in Danes from the population – A 9-year longitudinal study

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Background: Whereas exercise is generally regarded helpful in low back pain (LBP) conditions, the relevance of the level of physical activity is less understood. Potentially, certain levels of physical activity may either have a preventive effect or increase the risk of LBP. This contradiction has been explained in three different ways:

- 1) deconditioning paradigm;
- 2) an U-shaped relationship; and
- 3) fear avoidance theory.

They all add to the complexity in understanding the link between LBP and physical activity. Therefore, it remains unclear whether low or high levels of physical activity lead to LBP or vice versa.

Purpose: The purpose of this study was to reach a better understanding of levels of physical activity in relation to LBP. We described the cross-sectional associations between physical activity and LBP at ages 41, 45 and 49 years. We determined if there were longitudinal associations between physical activity and LBP four and eight years later. Finally, we determined if the changes

in the reporting of physical activity was influenced by previous LBP.

Methods: The study population was the 'Backs on Funen Cohort', a sample representative of the Danish general population. Participants were interviewed on three occasions. The outcome non-trivial LBP was defined as having LBP for more than 30 days in the previous year that resulted in at least one consequence (e.g., sought care for LBP, modified work, reduced working hours, or reduced leisure time activity). Physical activity was defined by the total number of hours per week engaged in various sporting activities and categorised into five subgroups. Associations were studied using generalised linear models adjusted for sex and BMI.

Results: Four hundred and twelve, 348 and 293 participants completed the three surveys. The prevalence of non-trivial LBP ranged from 18% to 20% and the mean number of hours spent in sports was 4.2, 5.4 and 2.1 at the three time-points. There were no statistical significant cross-sectional or longitudinal associations between time spent in sports and LBP. Over time, 55% lowered their participation in sports. Participants with LBP did not report fewer hours in sports than those without LBP previously; however, participants reporting previous LBP were more likely to report it in the future (9-17% versus 25-100%).

Conclusion(s): None of the proposed relationships between LBP and levels of physical activity were confirmed. High or low number of hours spent in sports did not increase the risk of LBP with consequences. Most of the participants reduced their hours spent in sports with age, but people with LBP did not reduce the time spent in sports more than people without LBP. Previous reporting of LBP most strongly predicted future LBP.

Implications: The results are provocative because they challenge general beliefs about the positive aspects of physical activity in relation to LBP, but maybe it is time to challenge these general beliefs.

Key-words: 1. Low back pain 2. Physical activity 3. General population

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Ethics approval: The results are provocative because they challenge general beliefs about the positive aspects of physical activity in relation to LBP, but maybe it is time to challenge these general beliefs.