Critique author	Linda Metzger

Bibliographic Data	
Authors	Hurley DA, Tully MA, Lonsdale C, and et al.
Title	Supervised walking in comparison with fitness training for chronic back pain in physiotherapy: results of the SWIFT single-blinded randomized controlled trial
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Citation	PAIN 156 (2015) 131–147.
Other information if relevant	TRIAL REGISTRATION Current Controlled Trials, Reference number: (ISRCTN17592092)

Methods	
Aim of study	To compare the difference in clinical effectiveness (mean change in functional disability at 6 months after randomization) and costs between a walking program (WP), a supervised general group exercise program (EC), and usual physiotherapy (UP), the control intervention, in participants with chronic low back pain (CLBP).
Design	Assessor single-blind randomized clinical trial

Participants	
Population from which participants are drawn	All people with non-specific chronic or recurrent low back pain (LBP) referred for physiotherapy by a general practitioner (GP) or hospital outpatient physiotherapy department in 1of the 5 participating acute public teaching hospitals in Dublin, Ireland who met the eligibility criteria were invited to participate.
Setting (location and type of facility)	Five hospital outpatient physiotherapy departments and gymnasiums and community-based free-living walking.
Age	adults 18 to 65 years of age, mean age 45.4 years
Sex	79 men, 167 women, total 246 at baseline
Total number of participants for whom outcome data were reported	At the primary endpoint of 6 months, 197 were analyzed
Inclusion criteria	Adults between 18 and 65 with chronic (≥3 mo) or recurrent (≥ 3 episodes in previous 12 mo) LBP of mechanical origin with/without radiation to the lower limb, and no spinal surgery within the previous12 mo. Patients suitable to carry out an exercise program, and willing to attend an 8-week treatment program of exercise. Present activity level is low or moderate. Access to a telephone for follow-up support, and fluency in English.

Exclusion criteria	Currently receiving or having received treatment for CLBP within the previous 3 mo, serious spinal pathology, eg, cancer, cauda equina, lesion, radicular pain indicative of nerve root compression, severe spinal stenosis, spondylolisthesis, fibromyalgia, systemic/inflammatory disease, eg, rheumatoid arthritis, neurological disorder or currently receiving treatment for cancer, acute (<6 wk) or subacute LBP (6-12 wk), provided that they have experienced <3 LBP episodes during previous 12 mo, unstable angina, uncontrolled cardiac dysrhythmias, severe aortic stenosis, acute systemic infection accompanied by fever, medicolegal issues, or pregnancy
Other information if relevant	No minimum pain intensity specified. There were no significant differences between groups in participants' baseline sociodemographic, clinical characteristics, or outcome measure scores. Mean duration of back pain was 7.8 years.

Intervention Groups

Group 1	
Group name	Walking Program (WP)
Number in group	82 at baseline, 63 at 6 months
Description of intervention	An individualized, graded volume and community based free-living walking program. A one week exercise diary using a pedometer informed the starting point prescription from the physiotherapist. Walks progressed to 30 minutes of moderate-intensity walking for 5 days per week by week 5, and were maintained at this level for the remainder of the program. The physiotherapist made weekly contact with each participant via telephone to evaluate and progress their weekly walking prescription according to their achievement of the previous week's walking frequency and volume target.
Duration of treatment period	8 weeks, 30 minutes of walking 5 days per week
Co-interventions if reported	Educational walking booklet, a copy of "The Back Book"
Additional information if relevant	Continue their normal daily routines and medication, but were requested to avoid any other treatment for their back pain during the study period

Group 2	
Group name	Exercise Class (EC)
Number in group	83 at baseline, 66 at 6 months
Description of intervention	A supervised general circuit format group exercise program based on the "Back to Fitness" program. Each class consisted of progressive or graded exercises, and a back care education message in the form of a "Tip for the Day." The exercise components included warm-up and stretching, up to 10 individual exercises (3 levels of difficulty progressed as appropriate of aerobic, trunk, upper limb, and lower limb strengthening), cool down, and relaxation delivered by a physiotherapist in the hospital gym.
Duration of treatment period	8 weeks, once per week on 8 consecutive weeks for each 1-hour class
Co-interventions if reported	a copy of "The Back Book"
Additional information if relevant	Continue their normal daily routines and medication, but were requested to avoid any other treatment for their back pain during the study period

Group 3	
Group name	Usual Physiotherapy (UP), control group
Number in group	81 at baseline, 68 at 6 months
Description of intervention	A combination of individualized education/advice, exercise therapy, and manipulative therapy at the discretion of the treating physiotherapist based on usual practice. No restriction on the number of visits, but the mean number of visits for physiotherapy for LBP is 5 in Ireland.
Duration of treatment period	8 weeks
Co-interventions if reported	a copy of "The Back Book"
Additional information if relevant	Continue their normal daily routines and medication, but were requested to avoid any other treatment for their back pain during the study period

Primary outcome	
Outcome name and criteria for definition	The primary outcome measure was change from baseline in LBP related functional disability measured on the Oswestry Disability Index [ODI] at 6-month follow-up.
Time points measured and/or reported	Baseline (before randomization), after randomization at 3, 6 (primary end point), and 12 months. Questionnaires returned by mail to a blinded assessor.
Differences between groups	1) At the 6-month primary end point, results showed significant improvements over time for the ODI in all 3 groups, where scores improved between baseline and all follow-up points (P <0.001). 2) There were no statistically significant differences between groups in the ODI change scores from baseline at all 3 follow-up points, and the associated between group effect sizes were very small (all < 0.20) and clinically unimportant. The WP group demonstrated a mean improvement of 6.9% points (95% CI, -3.6 to -10.2) in the ODI compared with 5.9% (95% CI, -2.7 to -9.2) in the EC group, and 5.1% (95% CI, -1.9 to -8.2) in the UP group. 3) A higher percentage of participants achieved a MCID in the ODI (≥10% points) in the WP group (48%, n=30), compared with the EC group (45%, n=29) and the UP group (31%, n=21).
Additional information if relevant	

Secondary outcomes	
Outcome name and criteria for definition	The secondary outcome measures were average LBP over the past week (11-point Numerical Pain Rating Scale [NRS]), health-related quality of life (Weighted Health Index), psychosocial fear avoidance due to physical activity measured by the Fear Avoidance Beliefs Questionnaire, Back Beliefs Questionnaire, self-reported Physical Activity, patient satisfaction, and a few others. Participants' resource utilization or cost outcomes were assessed using direct health and non-health care costs, and indirect costs.
Time points measured	Baseline (before randomization), after randomization at 3, 6(primary end point), and 12 months. Returned by mail to a blinded assessor.

Differences between groups	- For the NRS, the highest percentage of participants achieving an MCID (≥2 points) was in the WP group (44%, n=27), compared with the EC (29%, n= 19) and UP (37%, n =25) groups. - There were statistically and clinically significant greater reductions in fear avoidance in the WP group in those who achieved an MCID in the ODI (P= 0.001) and NRS at 6 months than those who did not (P= 0.001]. Similar findings were observed in the UP group although in a smaller number of participants, but not in the EC group. - There were improvements in the Weighted Health Index and Fear Avoidance-Physical Activity scores, but only minimal changes in Back Beliefs and Exercise Self-efficacy Questionnaires in all groups at follow-up. - No statistically significant differences between groups were found for physical activity, time off work due to LBP, patient satisfaction with care received, or outcome of treatment reported at any time point. - For the cost analysis, the average cost per participant of providing the EC was lowest, followed by the WP, and the UP was the highest. The lowest mean direct health care costs per participant during the follow-up period were for the WP, followed by UP and then the EC.
Additional information if relevant	Per protocol analysis results including only adherent participants was consistent with the ITT analysis. No serious adverse events were reported. In total, 19.7% of participants reported minor adverse events, predominantly increased back pain related to the WP.

Conclusions	
Key Conclusions Of Study Authors	- This study found no difference in the effectiveness of a WP, an evidence-based EC and UP for improvement in clinical outcomes for people with chronic LBP. - The findings showed that there were significant small improvements in functional disability, pain, quality of life, and fear avoidance over time, but no difference in these effects for the WP compared with the guideline-endorsed Back to Fitness EC program or UP. - The most consistent increase from low-to-moderate physical activity levels were observed in the WP group. A significantly greater reduction in fear avoidance beliefs for physical activity was also observed in the WP group compared to the other 2 groups. - The WP had the highest level of adherence and the lowest mean direct health care cost and mean cost per outcome at follow-up. The cost analysis provides preliminary evidence of the more favorable value for money of the WP from a health service provider's perspective. - The WP group intervention included most of the strategies reported to be effective, such as pedometers, individual tailoring, weekly progression, and telephone prompts. - Supervised walking provides an effective alternative to current forms of CLBP management. - Lack of improvement in beliefs about LBP and significant reduction in exercise self-efficacy in all groups highlights the need for greater emphasis on these components using effective behavior change techniques in future trials designed to increase physical activity in this population.

Risk of bias assessment		
Domain	Risk of bias Low High Unclear	Comments
Random sequence generation *(selection bias)*	Low	The stratified random allocation sequence was generated by the study statistician for each hospital after baseline measures were completed using the PC program Random Allocation Software to generate the randomization lists.
Allocation concealment *(selection bias)*	Low	The randomization schedule was only accessible by the statistician and the principal investigator and concealed from the trial coordinator until each participant was enrolled into the trial.
Blinding of participants and personnel *(performance bias)*	High	Because of the nature of the interventions, it was not possible to blind participants or physiotherapists.The lack of blinding does not prejudice the conclusions.

Blinding of outcome assessment *(detection bias)*	Low	A research assistant blinded to group allocation administered all outcome measures at follow-up. The statistician and health economist were unaware of group allocation until data analyses were complete.
Incomplete outcome data *(attrition bias)*	Low	Loss to follow up (no longer interested) was relatively equal between groups at 18%. All participants lost to follow-up were included in the ITT analysis.
Selective outcome reporting? *(reporting bias)*	Low	The trial was registered at Current Controlled Trials.
Other bias		Intention to treat analysis was used.

Sponsorship if reported		
Study funding sources if reported	Research reported in this article was supported by the Health Research Board Project Grant had no role in the design and conduct of the study.	
Possible conflicts of interest for study authors	None declared	
Notes:		

Comments by DOWC staff

- Overall all 3 interventions were effective for both pain and function, but none were superior for treating chronic low back pain.
- The findings are generalizable as the study was conducted in 5 of the largest outpatient physiotherapy departments in Ireland's public health system.
- The percentage of participants in the WP group reporting a MCID in functional disability (≥10% points ODI) was 45%, and for pain (≥2 points NRS) was 39% at 12 months. These percentages are notably excellent considering almost half the participants reached the MCID for function.
- The improvement in walking volume by 39 minutes per week in the WP group, and the fact that the majority of participants accomplished 150 minutes per week of moderate-intensity physical activity over the 8-week program suggests that this intervention achieved its objective and supported most people to attain the widely recommended general physical activity recommendations.
- The higher rate of adherence to the WP than to the EC or UP groups demonstrates its acceptability to the majority of participants. WP participants noted the positive experience of being able to manage their LBP condition with the support of a physiotherapist.
- Study strengths included a large sample size with adequate statistical power to detect clinically meaningful effects, use of pedometers and other strategies to encourage walking, and a long-term follow-up.

Comments by DOWC staff

- The WP was designed to follow the American College of Sports Medicine guidelines of 150 minutes of moderate-intensity exercise per week. However, the EC group did not incorporate their recommendations for resistance and flexibility exercises on 2 or 3 days each week within the design of the once weekly EC group, which may have confounded the outcomes for this group. Perhaps the EC group would have shown more effectiveness if they had met 2 or 3 days a week. Future trials of exercise programs should aim to adhere to evidence-based dosage recommendations for all included groups.

- The authors exaggerated the between group effect sizes of the ODI change scores (-0.14, -0.06, 0.07) calling them small in size when in reality the effects were very small in size and did not meet their definition of a small effect interpreted using Cohen d values where 0.2 is a small effect.

- Follow-up rates among participants in all groups may have been higher if there were not so many secondary outcome measures to report on. The additional burden on trial participants to fill out so many time consuming questionnaires at each follow-up time point may have convinced some participants to drop out of the study.

- The main limitations were lack of blinding of therapists and patients, the high number of treating therapists that may have confounded treatment fidelity, and unequal matching of the interventions in format and time.

- Walking is a suitable form of physical activity for the majority of the population, including health care–seeking individuals, being easy to do, requiring no special skills or facilities, and having little risk of injury.

Assessment by DOWC staff	
Overall assessment as suitability of evidence for the guideline ☐ High quality ☒ Adequate ☐ Inadequate	This adequate quality study provides some evidence that there is no significant difference in the effectiveness of an 8-week supervised walking program, an evidence-based group exercise class, and usual physiotherapy for improvement in functional disability after 6 months for people with chronic low back pain even though all 3 interventions resulted in small, significant improvements in physical function, reduction of pain, quality of life, and fear avoidance over time.
If inadequate, main reasons for recommending that the article not be cited as evidence	

Additional references if relevant
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