

Systematic review

Addition of motivational interventions to exercise and traditional Physiotherapy: a review and meta-analysis



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Abstract

Background Incontestable epidemiological trends indicate that, for the foreseeable future, mortality and morbidity will be dominated by an escalation in chronic lifestyle-related diseases. International guidelines recommend the implementation of evidence-based approaches to bring about health behaviour changes. Motivational interventions to increase adherence and physical activity are not part of traditional physiotherapy for any condition.

Objective To evaluate the evidence for the effectiveness of adding motivational interventions to traditional physiotherapy to increase physical activity and short- and long-term adherence to exercise prescriptions.

Data sources A literature search of PubMed, EMBASE, Scopus, CINAHL, PsychINFO, AMED and Allied Health Evidence database using keywords and subject headings.

Study selection Only randomised controlled trials comparing two or more arms, with one arm focused on motivational interventions influencing exercise and one control arm, were included. The search identified 493 titles, of which 14 studies (comprising 1504 participants) were included.

Data extraction The principal investigator extracted data that were reviewed independently by another author. Methodological quality was assessed independently by two authors using the Cochrane Risk of Bias tool and the PEDro scale. Outcomes were measured at the level of impairment, activity limitation and participation restriction. The standardised mean difference between the control and intervention groups at follow-up time points was used as the mode of analysis. $I^2 \leq 50\%$ was used as the cut-off point for acceptable heterogeneity, above which a random effects model was applied.

Results Exercise attendance was measured in six studies ($n = 378$), and the results indicate that there was no significant difference in exercise attendance between the groups (Random effects model, standardised mean difference 0.33, 95% confidence interval -0.03 to 0.68 , I^2 62%). Perceived self-efficacy results were pooled from six studies ($n = 722$), and a significant difference was found between the groups in favour of the interventions (Fixed effects model, standardised mean difference 0.71, 95% confidence interval 0.55 to 0.87 , I^2 41%). The results for levels of activity limitation were pooled ($n = 550$), and a significant difference was found between the groups in favour of the interventions (REM, standardised mean difference -0.37 , 95% confidence interval -0.65 to -0.08 , I^2 61%).

Limitations The majority of the included studies were of medium quality, and four studies were of low quality. Data were pooled from a wide variety of different populations and settings, increasing the assortment of study characteristics.

Conclusions Motivational interventions can help adherence to exercise, have a positive effect on long-term exercise behaviour, improve self-efficacy and reduce levels of activity limitation. The optimal theory choice and the most beneficial length and type of intervention have not been defined, although all interventions showed benefits. There is a need to determine how practising physiotherapists currently optimise adherence, and their current levels of knowledge about motivational interventions.

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Implications of key findings The results indicate that motivational interventions are successful for increasing healthy physical activity behaviour. Physiotherapists are ideally placed to take on this role, and motivational interventions must become part of physiotherapy practice. © 2014 Chartered Society of Physiotherapy. Published by Elsevier Ltd. All rights reserved.

Keywords: Exercise; Motivation; Patient adherence; Physical activity; Physiotherapy

Introduction

Incontestable epidemiological trends show that, for the foreseeable future, mortality and morbidity will be dominated by an escalation in chronic lifestyle-related diseases [1]. The Wanless Report (2004) outlined the need to optimise primary and preventive services [2]. This shift in focus from episodic individual care to health promotion places emphasis on health behaviours in healthcare delivery. This – coupled with the education of physiotherapists and their roles as promoters, preventers and rehabilitators – means that physiotherapists are ideally placed to influence physical activity behaviour.

The benefits of physical activity, defined as any bodily movement produced by skeletal muscles that results in energy expenditure [3], are well recognised [4]. However, high levels of inactivity exist. Research suggests that 31% of the world's population do not meet recommended levels of physical activity [5]. Non-compliance with recommendations is not the only health behaviour that physiotherapists need to influence. The success of many conventional physiotherapy treatment plans requires both attendance at treatment sessions and adherence to exercises that are to be completed, unsupervised, in the individual's own time. Evidence suggests that approximately 65% of individuals are likely to be non-adherent to home exercises, and 10% fail to complete their prescribed course of physiotherapy [6].

Existing UK [7], European [8] and US [9] guidelines recommend the implementation of evidence-based approaches to bring about health behaviour changes. The use of different interventions and strategies to enhance adherence to physical activity and exercise regimes is beginning to emerge in the international research literature, yet all of the guidelines recognise inconsistencies and gaps in the evidence. Motivational interventions are not part of traditional physiotherapy and are not provided by physiotherapists. Therefore, the aim of this review is to evaluate the evidence for the effectiveness of adding motivational interventions to traditional physiotherapy to increase physical activity and short- and long-term adherence to exercise prescriptions.

Methods

Identification of literature

The PRISMA standardised reporting guidelines were followed to standardise the conduct and reporting of this review. A systematic literature search of PubMed, EMBASE, Scopus, CINAHL, PsychINFO, AMED and Allied Health Evidence

database was conducted. The search was undertaken in accordance with the specific requirements of each database, using the keywords in Box A (see online supplementary material).

Inclusion and exclusion criteria

The inclusion criteria were based on the PICO (Population, Intervention, Comparison and Outcome) design as follows:

- All adult study populations were included.
- Randomised controlled trials comparing two or more arms, with one arm focused on the effect of a motivational intervention in addition to exercise and one control arm, were included.
- Motivational interventions as part of a package, psychological strategies, theory-based instructional manuals, internet-based behavioural programmes and relapse prevention and re-inforcement strategies were included.
- All types of exercise and delivery methods were included.
- All measures of adherence were included. Secondary measures of adherence included all outcomes at the level of impairment, activity limitation and participation restriction, in keeping with the International Classification of Functioning, Disability and Health.

Articles with educational only, subsidisation or money as motivation, differential re-inforcement techniques or use of pets as motivation were excluded.

Study selection

Two authors (NMcG and TC) identified and screened the titles retrieved through the electronic searches. Two reviewers (NMcG and ES) assessed the abstracts and full-text articles independently to identify eligible studies. Any disagreements were resolved through discussion. In cases where disagreement persisted, a third reviewer (TC) assessed suitability.

Data extraction

Data extraction was completed independently by the principal investigator (NMcG). Data extracted for the meta-analysis included mean, median and standard deviation for all outcome measures for each group at all time points. This was reviewed by a second author (RG). Data extracted for the narrative review were reviewed by another author (ES), and included authors, study setting, sample population and size, type and duration of intervention, mode and frequency of

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