Advice as a smoking cessation strategy: a systematic review and implications for physical therapists

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CRD summary
This review evaluated the effectiveness of smoking cessation advice delivered by health professionals. The authors concluded that various intensities of intervention produced higher quit rates than with control therapies or usual care. The moderate quality of included studies and potential limitations in the review methods mean that the reliability of this conclusion is unclear.

Authors' objectives
To evaluate the effectiveness of advice on smoking cessation, delivered by health professionals, during physical therapy sessions.

Searching
MEDLINE, CINAHL, EMBASE, PsycINFO, and Cochrane Central Register of Controlled Trials (CENTRAL) were searched for relevant published English-language articles. Search terms were reported and 14 key journals (listed in the paper), from 1968 onwards, were handsearched. Reference lists of systematic reviews were searched for additional studies.

Study selection
Randomised controlled trials (RCTs) or quasi-experimental studies, of smoking cessation advice or counselling, compared with no advice or usual care, delivered personally by a health care professional in a clinical setting, were eligible for inclusion. These studies had to provide quit rates (or data to calculate them using intention-to-treat analysis) measured by self report, with or without biochemical verification of abstinence. There had to be at least one follow-up in a five month period. Studies involving nicotine replacement therapy were included if this was separate from the advice intervention. Studies were excluded if they were of participants who had recently quit; they used professional counsellors or psychologists; they included smoking cessation advice in the control or usual care group; they focused on participants aged 18 years or younger; the smoking cessation was part of a multi-component lifestyle intervention; or they defined the control group as minimal care or intervention.

In the included studies, the patients had various backgrounds, demographic characteristics, and health conditions. Most of the intervention facilitators were physicians or nurses. The interventions and usual care descriptions varied in their content, structure, and length. For the analysis, the interventions were classified as brief intensity (10 minutes or less, in a single visit, with no follow-up, and could include written advice), intermediate intensity (10 to 30 minutes, or a brief intervention, but with at least one follow-up, using self-help manuals, or using a psycho-social behaviour change intervention), and intensive advice (more than 30 minutes, or a minimum of four sessions of more than 10 minutes each). Additional materials, such as self-help manuals and videos, were included in some studies. Seven studies reported using a theoretical framework for behaviour change.

Abstracts of articles were selected by one reviewer and cross-checked by a second reviewer. Discrepancies were resolved by consensus.

Assessment of study quality
The Physiotherapy Evidence Database (PEDro) scale was used to assess the quality of studies on their allocation concealment, randomisation, blinding, and follow-up. The maximum score was 10. A score of seven to 10 was high quality, four to six was fair quality, and zero to three was poor quality. The quality of the intervention and its implementation was also assessed, including the extent of health care professional training and the adherence to intervention protocols.

The authors did not state how many reviewers assessed validity.
Data extraction

The data were extracted to enable the calculation of risk ratios and 95% confidence intervals and authors were contacted for missing data, where necessary.

It appears that the data were extracted by one reviewer and a random sample was checked by a second reviewer.

Methods of synthesis

Risk ratios and 95% confidence intervals were pooled in a Mantel-Haenszel random-effects meta-analysis. The three intensities of the intervention were used as the framework for reporting the results. Statistical heterogeneity was expressed using the $I^2$ statistic. Sensitivity analyses were conducted to explore the effects of publication bias (using funnel plots), study quality, and the inclusion of studies with less than one year of follow-up, that did not use biochemical verification of abstinence, and where cluster-randomisation was used.

Results of the review

Thirty studies were reviewed (n=25,141 participants), including 26 RCTs (n=20,481) and four quasi-experimental studies (n=4,660). The mean PEDro score was 5.10 ±1.14. Four studies were high quality; 24 were fair quality; and two were poor quality. The average follow-up was 80.6% ±14.4, with six studies reporting more than 90%. Eight studies reported on the adherence of health professionals to the intervention protocols, with mixed results. Thirteen studies reported that training was given. Twenty-nine studies were meta-analysed (the data were not available in one study), comprising 40 comparisons.

All intervention intensities resulted in moderately increased chances of smoking cessation compared with usual care. For brief interventions, the risk ratio was 1.74 (95% CI 1.37 to 2.22) with moderate heterogeneity ($I^2$=58%). For intermediate interventions, the risk ratio was 1.71 (95% CI 1.39 to 2.09) with moderate heterogeneity ($I^2$=51%). For intensive interventions, the risk ratio was 1.60 (95% CI 1.13 to 2.27) with high heterogeneity ($I^2$=75%).

None of the sensitivity analyses significantly altered the risk ratios, except that it was lower for studies graded A for allocation concealment (RR 1.45, 95% CI 1.23 to 1.71).

Authors' conclusions

Patients who received smoking cessation advice or counselling from a health professional, at various intensities, had a greater probability of stopping (for at least six months) than those in control groups or those receiving usual care.

CRD commentary

The review question was clear and it was supported by detailed inclusion criteria for study design and outcome, but broader criteria for participants and interventions. The result was a wide variation in interventions and participants in the included studies. Many potentially relevant sources were searched, but the limitation to published English-language articles means that studies might have been missed and publication and language biases could not be ruled out. The review methods did not include the best attempts to minimise bias and error in the selection of studies and extraction of data.

An appropriate validity assessment tool was used, but it was not clear how it was applied. Extensive study details were provided and the method of synthesis appeared to be appropriate with the presence of heterogeneity.

The authors' conclusion reflected the evidence presented, but the moderate quality of the included studies and the potential limitations in the review methods mean that its reliability is unclear.

Implications of the review for practice and research

Practice: The authors stated that physical therapists were uniquely positioned to incorporate smoking cessation advice and follow-up into their practice. Health behaviour change should be considered as a clinical competency in physical therapy.
Research: The authors stated that further research was needed to determine how best to assess smokers and tailor their smoking cessation advice.

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