Motivational interviewing in medical care settings: a systematic review and meta-analysis of randomized controlled trials

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CRD summary

The authors concluded that motivational interviewing had effects across delivery location and patient characteristics, and when delivered in brief interventions. These conclusions largely reflected the evidence, but those on the time frame were less clear. Their reliability may be affected by limitations in the review methods.

Authors' objectives

To evaluate the effectiveness of motivational interviewing in medical care settings.

Searching

Eight databases (including PubMed, CINAHL and PsycINFO) were searched for peer reviewed articles published in English, from 1983 to August 2011. Search terms were reported. Other publications, identified by a network of trainers, were considered.

Study selection

Eligible were randomised controlled trials, comparing motivational interviewing or motivational enhancement therapy with no motivational interviewing, within the medical care setting including hospitals, clinics, emergency departments, medically-guided weight loss or diabetes centres, dentists, or physical therapy settings. Trials were excluded if participants were seeking help for addiction or mental and behavioural health; if interventions were conducted in an HIV clinic; and if motivational interviewing was delivered without human contact.

Settings and targeted outcomes varied between the included trials. Providers spent an average of 18 hours being trained in motivational interviewing (range four to 40 hours). The intervention was delivered with or without problem feedback. Sessions were delivered face-to-face, by phone, or by both methods. Providers were mental health professionals, nurses, dieticians, physicians, or a mixture of types. In over half the trials, the control was treatment as usual; other controls were on a waiting list or provided with information only.

The authors did not state how many reviewers selected trials for inclusion.

Assessment of study quality

Trial quality was assessed using an 18-point scale, based on the number of participants, attrition, quality control, whether fidelity of intervention delivery was assessed, objectivity of measurements, and reporting of follow-up.

Two reviewers independently assessed trial quality.

Data extraction

Two authors extracted the data on the differences in effectiveness between the groups. These data were used to calculate odds ratios and 95% confidence intervals.

Methods of synthesis

Pooled odds ratios and 95% confidence intervals were calculated using a random-effects model. Regression analyses were conducted for continuous moderators, including delivery, patient characteristics, study design, and outcomes such as patient adherence, risk-reduction behaviours, and patient approach to change. Statistical heterogeneity was assessed using Cochran's Q and I^2.

Publication bias was assessed using Rosenthal's and Orwin's fail-safe N and visual inspection of funnel plots.

Results of the review

Forty-eight trials (9,618 participants) were included. Trial quality ranged from 7 to 17 out of a maximum of 18. Follow-

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up ranged from immediately after intervention to 13 months or more; for most studies it ranged from five weeks to six months.

Compared with control, there was a statistically significant effect for motivational interviewing (OR 1.55, 95% CI 1.40 to 1.71). There was evidence of significant statistical heterogeneity (I^2=90.42%).

Significant effects for motivational interviewing were reported for a number of outcomes, including blood pressure and cholesterol, HIV viral load, dental outcomes, death rate, body weight, physical strength, quality of life, substance use (including alcohol and tobacco), sedentary behaviour, self-monitoring, and approach to change and treatment.

There were no significant differences between motivational interviewing and control groups for eating disorders and other risk-reduction behaviours, post-stroke functional independence, medication adherence, self-care, breast-feeding, some substance use outcomes (smoking tobacco amount, or marijuana abstinence), and some medical outcomes, such as heart rate or blood glucose.

All medical settings reported significant effects for motivational interviewing, except for HIV treatment clinics. Although each provider type reported positive outcomes, only those interventions delivered by mental health providers or mixed teams reached statistical significance. None of the patient characteristics (stage of disease, age, gender or ethnicity) significantly moderated the effects of motivational interviewing. Further results were reported.

There was no evidence of publication bias.

Authors' conclusions

Motivational interviewing had robust effects across outcomes such as delivery location, and across patient characteristics. It appeared to be effective when delivered in brief consultations.

CRD commentary

The review question and inclusion criteria were broadly defined, and various data sources were searched. The limitation to trials published in English may mean some trials were missed; formal assessment of publication bias found no evidence of it. Appropriate methods to reduce reviewer error and bias were used to extract the data and assess trial quality, but it was unclear whether similar methods were used to select trials.

Trial quality was assessed, but the results for each trial were not reported, so the robustness of the evidence is unclear. The methods of analysis appear to have been appropriate, and attempts were made to explore the reasons for the substantial statistical heterogeneity. The authors stated that it was often difficult to determine the type of control, which could have had an impact on the effect size.

The authors' conclusions about delivery location and patient characteristics reflected the evidence, but their conclusions on time were less clear. The reliability of the conclusions may be affected by bias in the selection of studies and incomplete reporting of the quality assessment.

Implications of the review for practice and research

<u>Practice</u>: The authors stated that emerging evidence for motivational interviewing in medical care settings suggested that it had a moderate advantage over comparison interventions and could be used for a wide range of behavioural issues in health care.

<u>Research</u>: The authors stated that research to explain the findings or to refine and develop the intervention should thoroughly evaluate the process.

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