

## The use of brief interventions adapted from motivational interviewing across behavioral domains: a systematic review

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### Authors' objectives

To examine the effectiveness of brief behavioural interventions adapting the principles and techniques of motivational interviewing (MI) in relation to substance abuse, smoking, HIV risk and diet/exercise.

### Searching

MEDLINE, PsycINFO and Dissertation Abstracts were searched from 1983 to 1999 using the terms 'motivational interviewing', 'motivational intervention', 'brief intervention' and 'motivational counselling'. The bibliographies of review papers on brief substance abuse interventions were also examined.

### Study selection

#### Study designs of evaluations included in the review

Only randomised controlled trials (RCTs) were included. The included studies compared MI alone with no treatment (either waiting list or assessment only); MI alone compared with an alternative treatment; and MI administered in combination with treatment as usual, compared with treatment as usual.

#### Specific interventions included in the review

Studies claiming to utilise the principles and techniques of MI (even if using a label other than MI) were included. Only studies comparing MI with no treatment or a comparison treatment were included. Only face-to-face interventions (of any duration) delivered on a one-to-one or group basis were included. Computer-based and telephone-based interventions were excluded.

The mean duration of treatment was 92.3 minutes (range: 10 to 360). Where reported, the interventions were delivered by: a postdoctoral psychologist or doctoral student; specialist substance abuse clinician; college degree or undergraduate student; or health counsellor, nurse or dietician.

#### Participants included in the review

Inclusion criteria in relation to the participants were not specified. The included studies were in the behavioural domains of substance abuse, smoking cessation, HIV risk reduction and diet/exercise. Substance abuse interventions were implemented in the following settings: specialist substance abuse treatment setting, university campus, hospital in-patient setting, out-patient medical clinic, emergency room and out-patient community agency. Smoking interventions were carried out in the university campus and out-patient medical clinic, and in in-patient, out-patient medical clinic and emergency room settings. HIV interventions were implemented in out-patient community agency settings. The diet/exercise interventions were carried out in out-patient medical clinics and an out-patient community clinic.

#### Outcomes assessed in the review

Only studies measuring behavioural and/or health outcomes were included. The included studies used a wide range of outcomes with many of the studies using multiple outcome measures. The outcomes used in the substance abuse studies included days abstinent, blood alcohol concentration, entry into treatment, days in treatment, drinks per week, total alcohol consumption and alcohol-related injuries. The outcomes used in the smoking cessation studies included percentage abstinent in the previous month and previous 24 hours, and the mean number of cigarettes per day. The outcomes used in the HIV risk reduction studies included frequency of protected vaginal intercourse, injecting risk taking score and sexual risk taking score. The outcomes used in the diet/exercise studies included increased physical activity score, physical activity, percentage dietary fat, treatment sessions attended, sales of disinfectant, and the percentage achieving a clinically-significant change in binge eating.

#### How were decisions on the relevance of primary studies made?

The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

#### Assessment of study quality

The authors do not state that they assessed quality.

#### Data extraction

The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Data relating to the following were extracted from all of the included studies: sample, setting, group design, duration of intervention, type and training of intervention, intervention quality control, and length of follow-up time interval. Where the information was available, the effect size (ES) and 95% confidence intervals (CIs) were estimated for each of the behavioural and health outcome variables for all the follow-up times reported by studies.

#### Methods of synthesis

##### How were the studies combined?

A narrative synthesis was undertaken. The ESs were grouped and plotted on the basis of the three types of study design: MI compared with no treatment; MI compared with an alternative treatment; and MI combined with treatment as usual compared to treatment as usual.

##### How were differences between studies investigated?

In the narrative synthesis the studies were also grouped according to the four behavioural domains. Differences between the studies were discussed in the text. A regression analysis was carried out using the length of follow-up period as the independent variable and the ES as the dependent variable.

#### Results of the review

Twenty-nine RCTs (n=6,953) were included.

Effect sizes were available for 26 studies.

Substance abuse (15 studies): in 10 of the studies the ESs were significant and in favour of MI. The ESs ranged from 0.30 (95% CI: 0.07, 0.53) to 0.95 (95% CI: 0.26, 1.63).

Smoking cessation (2 studies): in one of the studies, one of the two ESs reported was significant (0.23, 95% CI: 0.06, 0.39). In the second study, none of the obtained ESs were significant.

HIV risk reduction (4 studies): two of the studies had significant ESs, ranging from 0.46 (95% CI: 0.02, 0.90) to 0.64 (95% CI: 0.19, 1.09).

Diet/exercise studies (5 studies): three of the studies had significant ESs, ranging from 0.36 (95% CI: 0.07, 0.66) to 2.17 (95% CI: 0.93, 3.41).

The regression analysis found no significant decline in ESs across the studies as a function of follow-up time ( $p=0.84$ ). Within studies (using 5 studies with significant ESs and more than one follow-up period) the results were mixed.

### **Authors' conclusions**

There is good empirical evidence of the effectiveness of MI as a brief intervention for substance abuse, especially as an enhancement to more intensive treatment. The authors also state that in the areas of smoking cessation, HIV risk reduction and diet/exercise, the results are promising but not strong enough to recommend its (MI) dissemination.

### **CRD commentary**

The review question was clearly stated in terms of the intervention, study design and outcomes. However, the limitation of including studies that do not provide clear evidence about the precise nature of the counselling intervention, in a systematic review of MI, has been highlighted (see Other Publications of Related Interest). There were no eligibility criteria stated for the participants. Three relevant electronic databases were searched and the search terms were provided. No attempt was made to identify unpublished research and, therefore, some studies may have been missed. An assessment of publication bias was not carried out and it was not stated whether language restrictions were applied.

A quality assessment of the included studies was not carried out and there was limited discussion of the findings in the context of study quality. It was not stated whether review processes such as duplicate study selection and data extraction were used to help reduce errors and bias. While some details were presented for the individual studies, the data tables could have been more comprehensive, particularly in relation to the participants and the intervention used. There were some discrepancies between the narrative report of the findings, the abstract and the tabulated data. Given the heterogeneity of the included studies, it was appropriate to combine the studies in a narrative synthesis. However, there was limited discussion of the possible heterogeneity within the four behavioural domains. There appeared to be no primary outcomes of interest. The focus of the synthesis was on any outcome with a significant ES. This may have led to the authors' conclusions being overly positive.

### **Implications of the review for practice and research**

**Practice:** The authors state that in relation to substance abuse the evidence supports dissemination of MI as a brief intervention, especially as an enhancement to more intensive treatment.

**Research:** The authors state that research is required in relation to a number of aspects of MI. For instance, studies in medical settings of extremely brief MI interventions using only a few of the techniques; studies of cost-effectiveness; studies to determine optimal training duration and skills levels for those delivering MI; and studies of the theoretical components of MI. Recommendations are also made in relation to the quality of future research: the reporting of power analyses, ESs and CIs; and the use of a standardised coding system for monitoring MI style and technique.

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### **Bibliographic details**

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### **PubMedID**

[11784466](#)

### **Other publications of related interest**

The use of brief interventions adapted from motivational interviewing across behavioural domains: a systematic review [comments]. *Addiction* 2002;96:1769-75.

### **Indexing Status**

Subject indexing assigned by NLM

### **MeSH**

Adolescent; Adult; Aged; Behavior Therapy /methods; Confidence Intervals; Diet; Exercise; Female; HIV Infections /prevention & control; Humans; Life Style; Male; Middle Aged; Motivation; Psychotherapy, Brief /methods; Randomized Controlled Trials as Topic; Regression Analysis; Risk-Taking; Smoking Cessation /methods; Substance-Related Disorders /therapy; Treatment Outcome

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### **Record Status**

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.