



## Review

# Mechanisms of change within motivational interviewing in relation to health behaviors outcomes: A systematic review



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## ABSTRACT

**Objective:** Motivational interviewing (MI) has been identified as an effective treatment for health behaviors. Understanding the mechanisms of MI could have practical implications for MI delivery. This review is the first to examine mechanisms within MI that affect health behavior outcomes and summarizes and evaluates the evidence.

**Methods:** A systematic literature search was conducted in PSYCHINFO, MEDLINE and EMBASE to identify studies that delivered individual MI in the context of health behaviors, excluding addictions, and investigated mechanisms of MI. Effect sizes were calculated.

**Results:** 291 studies were identified and 37 met the inclusion criteria. Few of the 37 studies included, conducted mediation analyses. MI spirit and motivation were the most promising mechanisms of MI. Although self-efficacy was the most researched, it was not identified as a mechanism of MI. Study quality was generally poor.

**Conclusion:** Although this review has indicated possible mechanisms by which MI could influence health behavior outcomes, it also highlights that more high quality research is needed, looking at other possible mechanisms or causal pathways within health behavior outcomes.

**Practice implications:** MI spirit possibly plays an important role within MI and may potentially be used to evoke change talk which links to outcomes.

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## 1. Introduction

Leading causes of death have changed dramatically in the last few decades, shifting from infectious diseases to non-communicable causes [1]. Changing unhealthy lifestyle behaviors is an important issue. A key barrier to behavior change is a lack of motivation [2]. Motivational interviewing (MI) is a counseling approach designed to promote behavior change. It aims to strengthen personal motivation for, and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion [3]. There is a lack of evidence for specific mechanisms that may account for its efficacy within health behaviors [4,5] such as exercise or adhering to a medical regime. Looking at mechanisms of change (mediators) means attempting to understand what it is that brings about change. Understanding how MI works could lead to improvements in practice and efficacy, focus research efforts and further enhance our understanding of behavior change processes [6].

There have been at least 12 reviews that have found statistically significant effects of MI in relation to health outcomes [5,7–17]. However, these reviews do not examine the mechanisms of MI. Potential mechanisms relate to counselors' skills such as empathy [18,19], while others relate to client behavior such as change talk [20–22]. There are potential mediators 'within the individual' for example self-efficacy and readiness to change which have also been linked to outcomes within MI (see Section 2 for full list of mechanisms). Few systematic reviews explore mechanisms of MI. One review examining mechanisms of MI and substance abuse found the most consistent evidence pointed to change talk, clients' experience of discrepancy and therapist MI-inconsistent behaviors as being important [4]. The review however, investigates substance abuse outcomes and not health behaviors. Health behavior outcomes are "behavior patterns, actions and habits that relate to health maintenance, to health restoration and to health improvement" [23]. This includes behaviors such as exercise, diet, weight loss, managing bulimia or anorexia or adhering to a medical regime. These health behaviors may involve different mechanisms [15,24] as they require the modification or addition of a behavior rather than the termination of a behavior as for addictions [10,15]. Therefore mechanisms found to be important previously in the addictions field [4] may be different from those found to predict behavior change in these health behaviors. To date there has not been a systematic review looking at health behaviors and mechanisms within MI.

The aim of this review is to systematically review studies identifying possible mechanisms underlying the effectiveness of

MI in relation to health behaviors. It will look at mechanisms identified in the MI literature (addictions and health behaviors) to assess if the mechanisms of change in relation to health behaviors are the same or different from those in the addictions field. The review will look at the extent to which MI is associated with a particular mechanism and whether this mechanism is related to health outcomes.

## 2. Method

### 2.1. Study eligibility criteria

The papers included within this review must examine all three of these aspects: MI, a mechanism of MI and a health outcome otherwise they will not be included.

Selected studies met the following inclusion criteria:

- Articles published from 1980 to the present.
- Participants received MI or an intervention referred to as motivational enhancement therapy (MET), motivational enhancement or brief motivational intervention. These interventions all incorporate the techniques of MI [5]. Throughout this review the term MI incorporates these variations.
- Health behavior outcomes for example:
  - Weight
  - BMI
  - Diet
  - Physical activity
  - Fruit and vegetable intake
  - Self-care index
  - Glycemic control
  - Medication adherence (self-reports or pill counts)
- Qualitative or quantitative data
- MI sessions delivered to individuals and not groups
- The intervention was not delivered via the Internet.
- Articles published in English only.

Studies were excluded if: the therapeutic intervention was to treat alcohol problems, gambling, use of illegal substances and smoking as previous review [4] has examined mechanisms in addictions already. For the full list of search terms and search strategy see Appendix A.

### 2.2. Information sources

Research articles were identified from PSYCHINFO, MEDLINE and EMBASE. They were also identified from references of included

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