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Review

Motivational interviewing and outcomes in adults with type 2 diabetes: A systematic review

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ABSTRACT

Objectives: The management of type 2 diabetes (T2D) requires complex behavior changes and treatment regimens to achieve optimal outcomes. Interventions including motivational interviewing (MI) have been explored to help patients achieve behavior change and outcomes; this study aimed to explore evidence and gaps in the literature for MI interventions and outcomes in adults with T2D.
Methods: A modified Cochrane method structured the search strategy among databases including MEDLINE, CINAHL, PsycINFO, and others. Inclusion criteria included randomized controlled trials that assessed the effects of MI on behavior changeoutcomes and resultant clinical outcomes in adults with T2D.
Results: Of the initial 159 studies identified, 14 were eligible for retention. Behavior targets in the retained studies included dietary changes, physical activity, smoking cessation, and alcohol reduction. MI had significant impact on some dietary behaviors and on weight loss. MI intervention structures were heterogeneous across studies; fidelity assessment was infrequent.
Conclusion: The effects of MI interventions on outcomes in T2D showed promising results for dietary behaviors. Clinical change outcomes from MI-based interventions were most favorable for weight management in T2D.
Practice implications: Behavior-specific MI interventions may positively influence study outcomes. Assessment of MI intervention fidelity will enhance treatment integrity and claims for validity.

Contents

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1. Introduction

The treatment and management of diabetes mellitus is a continued life experience that requires the development of behavioral self-management to achieve optimal outcomes. The International Diabetes Federation (IDF) estimates that 387 million people worldwide are living with diabetes with 4.9 million deaths attributed to diabetes in 2014 [1]. The Centers for Disease Control and Prevention (CDC) indicates the U.S. prevalence of diabetes is at 9.3%. About 90–95% of these cases are diagnosed as type 2 diabetes (T2D) [2]. Suboptimal diabetes self-management increases the risk of diabetes-related complications [3,4]. As such, a substantial number of people living with diabetes are at risk for hyperlipidemia, hypertension, and macro vascular complications [5]. Diabetes treatment and care are associated with considerably higher lifetime treatment costs, particularly when treatment involves poor adherence to self-management behaviors [3,6]. The rising prevalence of T2D and its expensive risks and complications signal the need for interventions that promote positive changes to patient health behaviors in the self-management of T2D, particularly given the complex and multiple behavior changes needed to manage T2D.

The American Association of Diabetes Educators (AADE) identifies seven key behaviors in the management of diabetes. These include medication taking, healthy eating, physical activity, blood glucose monitoring, diabetes self-care-related problem solving, reduction of acute and chronic complication risk, and healthy coping [7]. Other self-care behaviors that are important in general health are also important with diabetes (e.g., smoking cessation, reducing alcohol intake, eye and foot exams, etc). Various intervention types have been utilized to support healthy behaviors in diabetes management and range from patient education to behavior modification strategies [7–10]. Motivational Interviewing (MI) has received significant attention in research and in practice in recent years since the evidence base for its positive impact has grown. MI is a patient-centered communication skills set aimed at evoking the intrinsic motivation of the individual to develop the behavior changes needed to manage T2D [11,12]. The effectiveness and clinical utility of MI in promoting health behaviors have been documented in diverse health conditions and populations and with many different target behaviors [13–15].

MI is designed to elicit the inner motivation of the individual by using the communication styles of guiding, following, and directing. It is a patient-centered communication skills set that involves, among other things, open-ended questions, reflective listening, and support for patient autonomy and self-efficacy. The state of ambivalence in a person often complicates behavior changes for the individual [12]. To overcome ambivalence, MI employs communication principles such as expressing empathy, rolling with resistance/avoiding argumentation, developing discrepancy, and supporting self-efficacy along with strategies for eliciting change talk [12].

Recent American Diabetes Association (ADA) treatment guidelines (2014) specifically recommend patient-centered communication as an intervention strategy for lifestyle behavior changes in the management of diabetes [13]. MI has been applied exclusively or as an add-on strategy in various diabetes interventions aimed at improving treatment outcomes for people living with diabetes [14]. Studies of MI-based interventions aimed at diabetes self-management behavior change have sometimes yielded inconsistent results for the impact of MI, with inadequate MI training and/or the presence of heterogeneous study designs and measures often cited as reasons for the differences in study findings [15–18]. It is also important to note that MI is a multi-dimensional intervention that is also patient-centered and will never look exactly the same as if following a script or protocol because of its very nature. There will always be some variability in the content of patient-centered interventions if they are truly patient-centered and this makes the training, implementation, and measurement of MI very challenging.

Because of these multi-faceted characteristics of both T2D and MI, and the challenges these present in comparing studies within a body of evidence for behavior change with either, it would be useful to conduct a systematic review of rigorous, controlled study designs to report evidence and gaps in the literature examining MI compared to control for its impact on targeted behavioral and resultant clinical outcomes in the management of a complex chronic disease requiring focus on multiple behavior changes within a complex array of psychosocial and medical history factors that uniquely impact decision-making about behavior change. There is not published a recent systematic review of MI in T2D that focuses only on T2D and includes only rigorous study designs with the intention of reporting evidence and gaps in the literature. Therefore, the objective of this review is to examine empirical evidence for the impact of MI on behavior change and resultant clinical outcomes in adults with T2D; this will be done by describing evidence and gaps in the literature to inform practitioners and researchers about the state of MI use and impact in adult T2D behavior change interventions.

2. Methods

2.1. Inclusion criteria

This study employed a modified Cochrane method of systematic review. In contrast to a typical Cochrane review which compares specific outcomes surrounding a narrowly defined research question between two interventions in a specific population, this systematic review used the rigorous systematic search-and-review approach applied to a more exploratory research question regarding evidence and gaps in the literature for MI as an intervention for behavior change in adults with T2D.

The selection criteria for eligible studies were based on the PICOS format (Participants, Intervention, Comparators, Outcomes, and Study design) recommended by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guideline. The inclusion criteria for retaining studies were:

- Population: adults (18 years and older) with T2D.
- Intervention: motivational interviewing (MI) based intervention.
- Comparators: usual care or a non-MI intervention.

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