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Review

Motivational interviewing: relevance in the treatment of rheumatoid arthritis?

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Abstract

Advances in pharmacological treatment options in RA have led to a dramatic potential for improvement in patients' physical and psychological status. Despite advances, poor outcomes, including fatigue, pain, reduced physical activity and quality of life, are still observed. Reasons include non-adherence to medication, insufficient knowledge about the disease and lack of support in coping and effectively self-managing their condition. Motivational interviewing (MI) is a person-centred approach that relies on collaboration and empathy aiming to elicit a person's own motivation for behaviour change. It has been implemented in a variety of long-term conditions, addressing issues such as lifestyle changes with beneficial effects, but it is yet to be widely recognized and adopted in the field of rheumatology. This review will explain the techniques underpinning MI and the rationale for adopting this approach in rheumatology with the aim to increase medication adherence and physical activity and improve patients' coping strategies for pain and fatigue.

Key words: motivational interviewing, rheumatoid arthritis, intensive management, remission rates, quality of life.

REVIEW

Rheumatology key messages

- Motivational interviewing might be able to contribute to improving quality of life in patients with RA.
- More well-conducted trials assessing the effectiveness of motivational interview-based interventions in RA are needed.
- Rheumatology health professionals need to adopt a motivational interview approach in their practices.

Introduction

RA is a long-term systemic condition characterized by inflammation of the synovium, resulting in chronic pain, joint damage and disability [1]. In recent decades there has been a dramatic shift in the management of RA, with new pharmacological strategies available such as biologics and anti-TNFs [2]. Despite new options, there is no cure for RA and only a minority of patients achieve full remission [3–6]. In addition, patients continue to endure pain and disabling fatigue despite controlling objective inflammation [7]. Despite improvements in outcomes and work productivity, patients with RA continue to have unmet needs due to symptoms that remain unaddressed [8]. Collaborative care and a good therapeutic alliance can contribute to better treatment and health outcomes in patients with musculoskeletal and other conditions through addressing a number of issues patients might find challenging, such as medication intake, lack of emotional support and involvement in their care [9–11]. Thus, if rheumatologists are going to achieve the goal of disease remission, additional strategies are needed that address RA in a more holistic manner rather than simply increasing immunosuppressive therapy. Holistic care requires involvement of a wider multidisciplinary team [12, 13], e.g. access to psychological interventions. The most common examples of psychological interventions in RA include stress management training, self-management skills and cognitive behavioural therapy (CBT) [14–18]. These approaches are employed to help patients develop coping strategies, improve their ability to self-manage and improve adherence to treatment. Psychological interventions, delivered by experts, have a robust evidence base [19, 20], however, access to such services is sporadic. It is for this reason that there is growing interest in psychological interventions

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that can be delivered by practitioners in routine care by non-psychological specialists, as reported in a systematic review by Alam *et al.* [21].

Motivational interviewing (MI) is a technique that has been developed and specifically fits this niche: a psychological intervention that can address key components of long-term disease management (coping strategies, self-management, medication adherence) and can be delivered as part of routine care by a patient's health care professional [22, 23]. MI stresses behavioural change by having a patient come to their own conclusions about what is wrong now with their current behaviour or therapy and what it would be like if the future were changed by adopting a new behaviour or treatment. Thus MI is concentrating on the side effects and risks of today and the benefits of later when the change has been made, which is the part of MI that enables behaviour change (Table 1). Such a tool, if effectively implemented, would align well with existing guidelines for RA care from the British Society of Rheumatology and British Health Professionals [12].

MI has been adopted as a central component of interventions in numerous studies—including an ongoing large multicentre trial in RA [24]—in a variety of long-term conditions such as FM [25] and diabetes [26] to address lifestyle changes (e.g. weight loss and smoking cessation) [27, 28]. The purpose of this review is to outline the concepts that underpin MI and summarize the existing evidence base for its effectiveness.

MI: an overview

MI is an evidence-based approach and focuses on constructive conversation with patients about behaviour change, initially described by Miller in 1983 [29] in alcohol counselling, where clients' motivation for behaviour change was poor while denial and resistance were pronounced [30, 31]. MI concepts and approaches were later expanded upon by Rollnick and Miller [32]. Because of positive results in alcohol addiction, the use of MI extended to include substance abuse [33] and smoking [34]. For example, findings from the Project MATCH [35] indicated that MI is comparable in effectiveness to two other commonly used treatment approaches in treating alcoholism, CBT and a 12-step facilitation approach. MI interventions have been assessed in a variety of clinical populations, e.g. in diabetes and FM to address motivations for behaviour change as well as aspects of long-term illness such as medication adherence [36], pain, physical activity and diet [37]. Specific components of the interventions, for instance social support, targeting two domains simultaneously (such as diet and physical activity), increased contact frequency and the use of a specific cluster of self-regulatory behaviour change techniques (e.g. goal-setting and self-monitoring) were found to be associated with increased effectiveness [37–39].

In general, the aim of MI is for individuals to overcome the ambivalence that prevents them from making desired changes in their lives. The role of the clinician is collaborative and at its core lies empathic listening to facilitate an understanding of the patient's perspective and decrease patient resistance. In addition to empathic listening, other principles that underpin MI are expressing empathy, rolling with resistance, supporting self-efficacy and developing discrepancy with the client (Table 2). A number of techniques are used to explore the individual's values and beliefs and to elicit motivation for change, including open-ended questions, affirmations, reflections and summaries (Table 2). Typical examples of physician–patient consultations based on MI principles are provided in the supplementary data, available at *Rheumatology* Online. The techniques that are applied are adapted to the person's state of readiness to change [40]. For a visual representation on the application and effect of MI in a health care consultation and the differences *vs* a non-MI session, see the following links to online video clips: http://www.youtube.com/watch?v=80XyNE89eCs and http://www.youtube.com/watch?v=URiKA7CKtfc [produced by the University of Florida, Department of Psychiatry; funded by Flight Attendant Medical Research Institute Grant #63504 (Co-PIs: Gold & Merlo)].

Efficacy of MI: evidence from reviews and meta-analyses

A systematic review of the effectiveness of MI-based interventions is beyond the scope of this article. However, a search for systematic reviews and meta-analyses examining the effects of MI interventions on patients with long-term conditions was undertaken. Seven databases were searched: MEDLINE, PsycARTICLES,

Table 1 Exploration of positive and negative experiences to enable behaviour change

Advantages of current behaviour: smoking helps me release stress	Disadvantages of changed future behaviour: not smoking would make me feel more stressed
Disadvantages of current behaviour: smoking makes me feel out of breath and fatigued	Advantages of changed future behaviour: not smoking would save me a lot of money and make me feel healthier

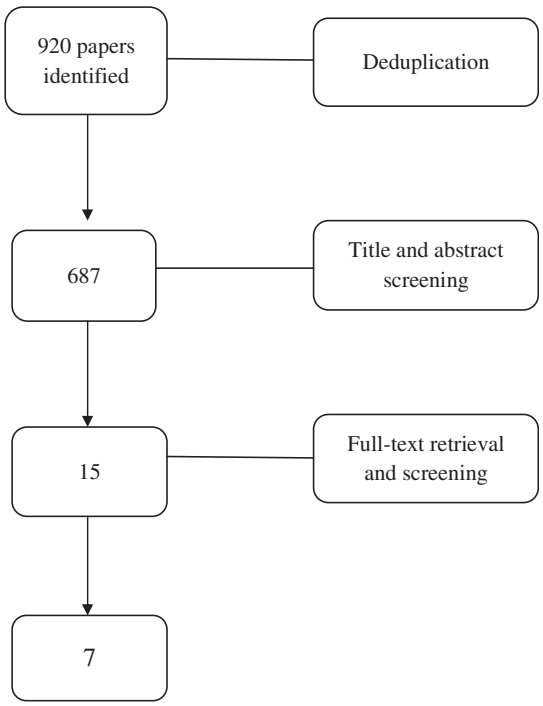
Table 2 Core principles and techniques of MI

Core principles of MI	MI techniques
Avoiding argument	Open-ended questions
Expressing empathy	Affirmations
Supporting self-efficacy	Reflections
Developing discrepancy	Summaries
Rolling with resistance	

MI: motivational interviewing.

PsycINFO, Embase, Web of Science, Ingenta Connect and Cumulative Index to Nursing and Allied Health Literature (CINAHL) from beginning to 4 July 2015. Key search terms included MI, chronic disease, long-term conditions, health behaviours, physical activity/exercise, treatment adherence, musculoskeletal conditions, diet and substance abuse. The terms were searched separately and combined with Boolean operators (AND/OR). A total of 920 papers were identified, which, after removal of duplicates and language filtering was reduced to 687. Title and abstract screening yielded 15 papers, of which, after full text retrieval, 5 were deemed relevant and were included: 3 systematic reviews [39, 41, 42], 1 systematic review of reviews [37] and 1 meta-analysis of controlled clinical trials on health behaviours related to long-term condition management such as substance abuse, diet and exercise [43]. The search strategy is presented in Fig. 1 and an overview of the studies identified is presented in Table 4. Overall, four of the five papers reported beneficial effects of MI on improving health behaviours in people with coronary risk factors [39] and on the risk of developing type 2 diabetes [37], on increasing medication adherence in patients with HIV [41] and on adherence to treatment of diseases as well as lifestyle changes such as body mass index, total blood cholesterol, systolic blood pressure, blood alcohol concentration and standard ethanol content [42]. The remaining paper by Burke *et al.* [43] reported that adaptations of MI were not effective in certain behaviours such as smoking cessation and HIV-risk behaviours, but that they were moderately effective for others such as diet and exercise and alcohol and drug problems. One reason that could be considered for the lack of effect of MI in certain domains such as smoking cessation and HIV-risk behaviours could be that the participants in those studies might have been ready for a change but might not have been in need of MI support. They could have developed their own motivation beforehand and might also have found their own ways of changing their behaviour. In contrast, other people may be in need of MI techniques as a means of enabling change.

Fig. 1 Review process of studies using MI in interventions in musculoskeletal and rheumatic diseases



In summary, MI is one of many interventions that have been developed to support patients with long-term conditions in improving their self-management. The impact of these interventions, however, can vary depending on the objectives and the particular characteristics of the chronic illness. Notably, Söderlund *et al.* [22] concluded that the effectiveness of MI delivery did not depend on the provider's professional or academic background. A variety of health professionals such as nurses, doctors, midwives, dieticians and psychologists were equally successful in delivering MI appropriately [22].

Summary of the literature on the role of MI in the health care setting

The evidence from systematic reviews and meta-analyses indicates that MI-based interventions are effective—as compared with standard care or provision of information only—in the following outcomes: weight loss and increased physical activity [37], increased fruit and vegetable consumption [39], decreased alcohol intake [42], improved quality of life and self-care behaviours [39], increased medication adherence [41] and decreased total blood cholesterol and systolic blood pressure [42].

Despite the fact that the MI-based interventions described above were applied on outcomes related to conditions other than RA, such as cardiovascular disease, diabetes and HIV, these outcomes are relevant to RA as well. Some of the most common problem areas identified in RA include pain and fatigue [51], decreased physical activity [52], excess weight [53], medication non-adherence [54, 55] and impaired quality of life [56]. Therefore it is likely that interventions based on MI could also be beneficial for patients with RA.

According to the results of a systematic review of reviews [37], the components that increased intervention effectiveness were social support; approaches addressing both diet and physical activity; established behaviour change techniques such as identification of barriers, problem solving, action planning and increased contact frequency; and a combination of self-regulatory behaviour change techniques such as goal-setting, self-monitoring etc.

Moreover, no clear relationships were found between the effectiveness of the interventions and their setting, delivery mode, study population or delivery provider [37]. In most studies, MI was delivered in person; in one, the telephone was used for some sessions, while in another,

TABLE 3 Overview of reviews and meta-analyses evaluating the effectiveness of interventions based on MI in long-term conditions and health-related behaviours

Authors	Aim/objective	Study design	Studies included	Outcome
Thompson et al. (2011) [39]	To review evidence on MI in relation to cardiovascular health	Systematic review	13 studies: 5 primary source papers (RCTs, quasi, case–control) and 8 secondary studies (meta-analyses, systematic and literature reviews)	MI was useful to help nurses improve health behaviour in people with coronary risk factors
Hill and Kavookjian (2012) [41]	To examine the MI intervention literature regarding outcomes in improving HAART adherence in patients with HIV	Systematic review	Five RCTs	MI appeared to be a promising intervention based on results from three studies where medication adherence increased as a result of MI. Great variability in measuring adherence limited conclusions
Greaves et al. (2011) [37]	To review evidence on interventions promoting dietary and/or physical activity change in producing weight and behaviour changes in adults with a risk of developing type 2 diabetes	Systematic review of reviews	30 systematic reviews (10 on physical activity interventions, 3 on dietary interventions and 17 on both)	Increased effectiveness of interventions was associated with the use of social support, established behaviour change techniques, contact frequency and self-regulatory techniques (e.g. goal-setting, self-monitoring)
Burke et al. (2003) [43]	To conduct a meta-analytic examination of the MI literature	Meta-analysis of controlled clinical trials investigating AMIs in treating problem behaviours (e.g. substance abuse, diet and exercise)	30 controlled clinical trials: 15 examining AMIs for alcohol problems, 2 for smoking cessation, 5 for drug addiction, 2 for HIV-risk behaviours, 4 for diet and exercise, 1 for treatment adherence and 1 for eating disorders	AMIs were not effective in smoking cessation and HIV-risk behaviours. AMIs were moderately effective for diet and exercise and alcohol and drug problems. AMIs were equivalent to other active treatments but more time effective
Rubak et al. (2005) [42]	To evaluate the effectiveness of MI in different disease areas and to identify outcome factors	Systematic review and meta-analysis of RCTs using MI as the intervention	72 RCTs	MI outperformed traditional provision of advice in the treatment of problem areas and behaviours in a range of diseases

AMI: adaptation of MI; HAART: highly active antiretroviral therapy; MI: motivational interviewing; RCT: randomized controlled trial.

behavioural audiotapes, a workbook and mailed material were included in the sessions. The interventions ranged between two and eight sessions and were administered over a period of 2–6 months.

What is the evidence for MI in RA?

Evidence for the use of MI is more limited in musculoskeletal diseases, and specifically in RA. The 687 papers identified in the previous section were screened for their relevance to musculoskeletal and rheumatic diseases based on title and abstract. Screening yielded 15 studies, of which 7 were included after full-text retrieval: 1 systematic review [44], 2 randomized controlled trials (RCTs) [36, 47], 2 interventional studies [48, 49] and 2 pilot studies [45, 46]. The systematic review of MI within musculoskeletal health, not including RA, could not provide direct comparative interpretations for the efficacy of interventions using MI [44]. Variations in modality, provider, duration, frequency and competency of MI delivery as well as variation in the fidelity of MI prevented conclusions as to its impact in musculoskeletal diseases.

Table 4 Overview of intervention studies evaluating the effectiveness of MI in rheumatic/musculoskeletal conditions

Authors	Aim/objective	Study design	Intervention	Outcome
Chilton et al. (2012) [44]	To evaluate the effectiveness of MI to create change within musculoskeletal health care and identify the level of training received	Systematic review	Five studies within chronic pain, low back pain, FM and osteoporosis (cluster/non/and randomized trials, and quasi-experimental studies)	Inconclusive due to great variation in delivery modality, musculoskeletal conditions and type of MI intervention
Zwikker et al. (2014) [36]	To assess the effect of an intervention based on MI on changes in medication beliefs and adherence in RA	Single-centre researcher-blinded randomized clinical trial with two arms 1:1	MI-guided group sessions led by a pharmacist *vs* brochures about prescribed DMARD (information only)	No superiority of intervention over control arm in changing beliefs about medication and increasing adherence-related outcomes such as walking and cholesterol levels
Karlsson et al. (2014) [45]	To develop and evaluate a method for smoking cessation support for patients with RA	Pilot study	Rheumatology nurse with MI and smoking cessation training provided individualized smoking cessation support every 4 weeks over 2 years	43% of patients with RA within the smoking cessation programme stopped smoking
Ferguson et al. (2013) [46]	To adapt a psychological intervention based on CBT and MI for RA patients and assess its effectiveness in terms of improving adherence and quality of life	Pilot study	Up to six individual sessions of compliance therapy *vs* usual care	Significant improvement in mean post-intervention scores on both adherence measures, but not in the control group
Ang et al. (2013) [47]	To test the efficacy of MI in promoting exercise and improve symptoms in patients with FM	RCT	Six MI sessions *vs* an equal number of FM self-management lessons (education)	Despite a lack of benefit in the long-term, MI appeared to confer short-term benefits with regard to self-reported physical activity and clinical outcomes
Everett et al. (2012) [48]	To evaluate the 6 month effect of INC on patients with SLE participating in an ongoing CVD prevention counselling programme	Interventional study	INC incorporated patient-centred methods (tailored nutrition education, goal-setting and MI). Changes in select nutrients and diet habits, anthropometric measures and clinical outcomes were evaluated	A 6 month preliminary analysis suggested that INC using patient-centred methods was effective in promoting changes in nutrient intake, diet habits and possibly anthropometric measures (reduced sodium, fat, cholesterol and calorie intake and increased consumption of fruits, vegetables and fibre)
De Gucht *et al.* (2012) [49]	To examine the effects of a theory-based psychological intervention to increase physical activity among patients with RA	Interventional study	A 1 hour patient education session, one MI and two SR sessions *vs* patient education alone	The MI + SR intervention outperformed the control group in terms of sustained increases in physical activity at 32 weeks

(continued)

TABLE 4 Continued

Authors	Aim/objective	Study design	Intervention	Outcome
Stockl et al. (2010) [50]	To evaluate adherence to injectable RA medications and assess health-related quality of life, work productivity and physical functioning	Observational cohort study	RA DTM programme *vs* specialty and community pharmacy services. DTM included patient-centred methods, MI elements, education and self-management skills training	Patients in the DTM programme had significantly higher injectable RA medication adherence compared with specialty and community patients. SF-12 physical components and HAQ-DI scores were significantly improved as well

CBT: cognitive behavioural therapy; CVD: cardiovascular disease; DTM: disease therapy management; HAQ-DI: Health Assessment Questionnaire Disability Index; INC: individualized nutrition counselling; MI: motivational interviewing; RCT: randomized controlled trial; SF-12: 12-item Short Form Health Survey; SR, self-regulation.

As a result, Chilton *et al.* [44] highlighted the need for well-designed RCTs with sufficient power to measure the effectiveness of MI in self-management and its application to promotion of lifestyle changes such as diet or physical activity.

While further systematic reviews on the use of MI and/or other psychological interventions in RA are not available, to the best of our knowledge, there are a number of studies that examined MI-based interventions in musculoskeletal and rheumatic diseases as identified in our search of the literature. The RCT by Zwikker *et al.* [36] assessed the effectiveness of a group intervention to change medication beliefs and improve medication adherence compared with a control group that received brochures at home about the DMARDs used at the time by patients with RA in The Netherlands. The intervention was based on MI principles and techniques and targeted patient beliefs about the necessity of and concerns about medication, such as side effects, as well as the resolution of perceived barriers in medication uptake [36]. In addition to addressing patient beliefs about the effect and necessity of the medication through provision of information and education on DMARDs, the intervention also focused on increasing patients' self-efficacy. The sessions were delivered in a group format based on the social influence/modelling theory to increase communication regarding the medication. Despite the brevity of the intervention—two group sessions 1 week apart of 1.5 h duration with individual homework assignments between the two sessions and follow-up by the practitioners 8 weeks after the last group meeting—the intervention enhanced medication adherence rates in RA patients [36]. Patient education about RA and their treatment options as well as addressing barriers to medication adherence were the components of an MI-based telephone intervention with RA patients for three or six monthly sessions over a 7-month period [50]. However, the intervention was not more effective than the control arm that involved brochures on DMARDs provided to patients at home. The authors attributed the lack of effect to the possibility of regression to the mean [57] due to the likelihood of patients' beliefs having changed before the intervention. A further possible explanation for the study findings include the Hawthorne effect [58], which refers to individuals adjusting their behaviour in response to being observed, as well as focusing only on patient-related factors or selection bias due to recruiting patients with long-standing RA (mean $>$14 years).

Further evidence for the efficacy of MI in rheumatology is provided from two pilot studies [45, 46]. Karlsson *et al.* [45] developed and evaluated a method of smoking cessation support for patients with RA, while Ferguson *et al.* [46] assessed the effectiveness of an intervention based on CBT and MI in terms of improving adherence and quality of life in patients with RA. The studies found that MI was associated with a significant increase in smoking cessation rates and adherence measures, respectively [45, 46]. MI was also reported to be beneficial in increasing physical activity in patients with RA [49] and FM [47], especially when combined with self-regulation components such as goal-setting or monitoring [49]. In addition, individualized counselling sessions that included MI elements as well as patient-centred methods such as tailored nutrition education and goal-setting were effective in promoting changes in dietary intake and patterns as well as anthropometric measures such as BMI in patients with SLE [48].

To sum up, MI has relevance to many aspects of RA care, from medication adherence to self-management. At present, the application of MI is infrequent and underresearched in RA, as evidenced from the limited literature in the field identified by the search that was undertaken, compared with other long-term conditions such as diabetes and cardiovascular disease. There is growing awareness that rheumatology practice could be enhanced through the use of psychological tools such as MI and, as such, there is a need for clinical trials to clarify the efficacy and acceptability of such interventions for patients and clinicians in the rheumatology field.

Implications

Most clinicians in rheumatology have little or no formal training in therapeutic techniques. As more evidence accumulates in other disease areas highlighting the importance of psychological/behavioural interventions, acknowledging that such tools are within the grasp of the average practitioner and not just relevant to psychologists, it is time the rheumatology community engaged more widely in behavioural interviewing techniques such as MI. Clinicians could be trained in a 2 day course in MI, which has been shown to be feasible and effective in an RCT that focused on training clinicians in MI [23]. Miller *et al.* [23] found that clinicians without previous MI training attending a 2 day workshop showed substantial gains in MI proficiency in the first 4 months after the training compared with individuals who used self-directed learning by book and videotapes, who showed no change. In addition, there was a significant change in patients' response as evidenced by increased talk of change and lower resistance in the first 4 months of the sessions [23]. Therefore, it seems likely that clinicians will be able to effectively use MI in their routine practice, providing there is ongoing supervision and feedback available after the training has been completed.

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