INPLASY PROTOCOL

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Effect of psychological interventions on depression in patients with arthritis: a network meta-analysis

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Review question / Objective: The purpose of this study is to compare the effects of different types of psychological interventions on depression in patients with arthritis by means of network meta-analysis, so as to provide evidence for the formulation of psychological intervention program for patients with arthritis, and to provide reference for further research.

Information sources: A systematical literature search was conducted to determine randomized controlled trials of psychological intervention for patients with arthritis. We use a pre-defined search strategy to search the databases including CNKI, Wanfang, PubMed, Embase, the Cochrane Library, CINAHL, PsycINFO. Two registration platforms (Clinical Trials and the WHO Clinical Trials Registry Platform) will also retrieved to identify eligible trials. The search strategy was to use more than thirty keywords related to psychological intervention (such as meditation, relaxation, cognitive-behavioral, psychoeducational, counseling, biofeedback, mind-body, etc.), and combined with 10 key words related to arthritis, the search date was from the beginning to 2021. In addition, we will manually examine the reference list of these articles for more related research. Include studies published in Chinese or English.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 January 2022 and was last updated on 11 January 2022 (registration number INPLASY202210057).

INTRODUCTION

Review question / Objective: The purpose of this study is to compare the effects of different types of psychological interventions on depression in patients with arthritis by means of network meta-analysis, so as to provide evidence for the formulation of psychological intervention program for patients with arthritis, and to provide reference for further research.

Condition being studied: As the main cause of pain and disability, arthritis not only reduces physical function and quality of life, but also has a far-reaching impact on psychosocial status. Osteoarthritis (OA) and rheumatoid arthritis (RA) are the two most common types of arthritis, the most common symptom of which is pain. In addition, patients will experience serious problems such as joint stiffness, joint injury and physical disability. These physical symptoms as well as a series of economic and social burdens and changes in family roles brought about by long-term treatment can easily lead to depressive symptoms. Arthritis patients with depressive symptoms will not only reduce compliance, affect the effect of treatment, but also further aggravate pain, dysfunction and other symptoms, promote the progress of osteoarthritis, and form a vicious circle. Therefore, the intervention of its depressive symptoms is very necessary, and psychological intervention is the recommended intervention method at present. There have been some randomized controlled trials to explore the effectiveness of various psychological interventions on arthritis patients and related systematic reviews, but the conclusions are still inconsistent. And the previous systematic review due to the limited number of included literature and other reasons, it is difficult to further study the effectiveness of different kinds of psychological intervention. In addition, with the rapid development of psychological intervention in recent years, many high-quality studies have been carried out, and there have been many types and forms of psychological intervention, such as Internet-based intervention. Therefore, this study conducted a reticular meta analysis to explore the effect of psychological intervention on depression in patients with arthritis.

METHODS

Search strategy: Pubmed search strategy as an example: #1 osteoarthritis OR osteoarthr* OR degenerative arthritis OR OA

Arthritis, Rheumatoid OR arthrit* OR rheumatoid arthritis OR "inflammatory rheumatic disease*" OR RA #2 psychotherapy OR psychotherap* OR psychological OR psychology OR Cognitive Behavioral Therapy OR cognitive behav* therap* OR cognitive therap* OR behav* therap* OR CBT OR psycho-education OR psychoeducation* OR relax* OR imagery OR hypnosis OR hypnotherap* OR pain coping OR mindfulness OR meditation OR psychosocial* OR biofeedback OR feedback OR psychodynamic OR psychoanalytic OR counseling OR counsel* OR motivat* interv* OR restructur* OR self control OR stress management OR supportive therap* OR systemic therap* OR family therap* OR group therap* #3 randomized controlled trial.pt. OR controlled clinical trial.pt. OR randomized.ab. OR placebo.ab. OR clinical trials as topic.sh. OR randomly.ab. OR trial,ti. #4 #1 AND #2 AND #3.

Participant or population: Adult patients with osteoarthritis (OA) and rheumatoid arthritis (RA).

Intervention: Psychological intervention is defined as active treatment, rather than just providing information about the disease. All types of psychological intervention are included. Common types of psychological intervention include cognitive behavioral therapy, relax intervention, mindfulness-based intervention, emotional disclosure, supportive intervention and so on. Health education that simply provides patients with disease-related information, as well as tai chi, yoga and massage therapy are not considered to be the main psychological properties and are therefore not included.

Comparator: Described as usual care, wait-list, placebo and so on, or another psychological intervention.

Study designs to be included: Randomized controlled trial.

Eligibility criteria: Included criteria:(1) type of study was RCT;(2) participants included adults (≥ 18 years old) with a clinical

diagnosis of OA or RA of any joint;(3) the type of intervention was psychological interventions versus a control condition or another type of psychological intervention; (4) the outcome variables had to include at least one of the following variables: depression, anxiety, pain, psychological disability, physical function, self-efficacy or fatigue;(5)provided the mean (standard deviation) to perform effect sizes, or provided the mean (95% confidence interval) or the mean (standard error) that could be calculated to obtain the mean (standard deviation).Excluded criteria:(1) employed a physical treatment or other interventions as a co-intervention (e.g. exercise);(2) study purpose is to focus on psychological intervention in the perioperative period of joint replacement; (3) the sample overlapped either partially or completely with the sample of another study meeting inclusion criteria for the meta-analysis.

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Main outcome(s): Effect of post-intervention (the first time point after treatment) and follow-up (the last time point of evaluation and <1 year) Main

outcome：depression Second outcome：anxiety, pain, psychological disability, physical function, self-efficacy, fatigue.

Quality assessment / Risk of bias analysis: the risk of bias will be assessed based on the Cochrane Risk of Bias Tool composed by seven domains, including random sequence generation, allocation concealment, blinding of participants and researchers, blinding of outcome evaluator, incomplete outcome data addressed, selective reporting of results, and other risk bias. Studies will be identified as 'high risk of bias', 'unclear risk of bias', and 'low risk of bias' according to the results of each item evaluation.

Strategy of data synthesis: Network meta-analyses will be conducted using a frequentist framework using the software Revman 5.3 and stata 15.0. We will apply consistency models and random-effects which can deal with the heterogeneity between studies. For each specific outcome, we will sequence the effects of different types of psychological interventions and the optimal probability ranking curve surface under the cumulative ranking curve (SUCRA) is calculated to rank the efficacy. The higher SUCRA value means the higher likelihood that the treatment is at the top rank. An inconsistency check is performed by the node-splitting when there is a closed loop, that is, there is evidence of direct comparison and indirect comparison at the same time. Statistical heterogeneity among studies will be assessed with I2 value. The transitivity will be evaluated by comparing clinical and methodological characteristics among studies.

Subgroup analysis: Meta-regression and subgroup analyses will be performed to explore heterogeneity and inconsistency by the following variables if the data is appropriate, including average age, education level, the frequency and duration of psychological intervention, baseline depression severity, disease duration and so on. We will also explore the effects of different ways of interventions, such as the

comparison between face-to-face intervention and Internet-based intervention.

Sensitivity analysis: We also will conduct sensitivity analyses by removing the studies with low risk of bias and too large/small sample size to ascertain the stability of results.

Country(ies) involved: China.

Keywords: arthritis ,protocol, systematic review, psychological intervention, network meta-analysis.

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