INPLASY PROTOCOL

To cite: Zhao et al. Effect of online-based non-pharmacological interventions on depression: a systematic review and meta-analysis. Inplasy protocol 202270098. doi: 10.37766/inplasy2022.7.0098

Received: 22 July 2022

Published: 22 July 2022

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Support: **Shanxi Province.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

Effect of online-based non-pharmacological interventions on depression: a systematic review and meta-analysis

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Review question / Objective: **To study whether online non-pharmacological interventions can improve the health of people with depression and investigated the components of these interventions.**
Condition being studied: **The high prevalence, high disability rate, and high burden rate of depression have attracted the attention of more and more scholars. At present, depression is mainly treated by drugs, but the side effects of drug treatment, withdrawal reactions and other disadvantages are more prominent in patients with depression, so more and more scholars are focusing on non-drug interventions such as exercise and exercise , cognitive correction, yoga, music therapy, diet therapy, etc.) to further improve the health status of patients with depression, the effect reports of different interventions are not uniform, so it is necessary to summarize the non-drug interventions for depression and report their effectiveness systematic review. At present, the systematic reviews on patients with depression in the literature mostly focus on a certain intervention or a specific population such as the elderly, pregnant women, etc. Therefore, this study conducted a systematic review and meta-analysis of non-drug interventions for patients with depression, in order to provide clinical Provide the basis for the development of practice guidelines.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 July 2022 and was last updated on 22 July 2022 (registration number INPLASY202270098).

INTRODUCTION

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Rationale: Depression should be approached with both pharmacotherapy and complementary therapies. The disadvantages posed by psychopharmacotherapy may be more prominent among depression adults and there is a greater probability of drug interference. Different non-pharmacological interventions have been reported to reduce depressive symptoms with no adverse side effects. In particular, the disadvantages posed by psychopharmacotherapy, such as long response time, side effects, potential risk of dependency and tolerance, and poor compliance rates. A systematic review on the effectiveness of non-pharmacological interventions to treat depressive symptoms is timely in order to generate best practice guidelines specifically directed to nurses who work in this area.

Condition being studied: The high prevalence, high disability rate, and high burden rate of depression have attracted the attention of more and more scholars. At present, depression is mainly treated by drugs, but the side effects of drug treatment, withdrawal reactions and other disadvantages are more prominent in patients with depression, so more and more scholars are focusing on non-drug interventions such as exercise and exercise , cognitive correction, yoga, music therapy, diet therapy, etc.) to further improve the health status of patients with depression, the effect reports of different interventions are not uniform, so it is necessary to summarize the non-drug interventions for depression and report their effectiveness systematic review. At present, the systematic reviews on patients with depression in the literature mostly focus on a certain intervention or a specific population such as the elderly, pregnant women, etc. Therefore, this study conducted a systematic review and meta-analysis of non-drug interventions for patients with depression, in order to provide clinical Provide the basis for the development of practice guidelines.

METHODS

Search strategy: (((((((depression[Title/Abstract]) OR (Depressive Symptoms[Title/Abstract])) OR (Depressive Symptom[Title/Abstract])) OR (Symptom, Depressive[Title/Abstract])) OR (Symptoms, Depressive[Title/Abstract])) OR (Emotional Depression[Title/Abstract])) OR (Depression, Emotional[Title/Abstract])) AND ((((((((((((((((((Online-Based[Title/Abstract]) OR (Internet-Based Intervention[Title/Abstract])) OR (Internet Based Intervention[Title/Abstract])) OR (Internet-Based Interventions[Title/Abstract])) OR (Intervention, Internet-Based[Title/Abstract])) OR (Interventions, Internet-Based[Title/Abstract])) OR (Web-based Intervention[Title/Abstract])) OR (Intervention, Web-based[Title/Abstract])) OR (Interventions, Web-based[Title/Abstract])) OR (Web based Intervention[Title/Abstract])) OR (Web-based Interventions[Title/Abstract])) OR (Online Intervention[Title/Abstract])) OR (Intervention, Online[Title/Abstract])) OR (Interventions, Online[Title/Abstract])) OR (Online Interventions[Title/Abstract])) OR (Internet Intervention[Title/Abstract])) OR (Internet Interventions[Title/Abstract])) OR (Intervention, Internet[Title/Abstract])) OR (Interventions, Internet[Title/Abstract]))) AND (((((randomized controlled trial[Title/Abstract]) OR (controlled clinical trial[Title/Abstract])) OR (randomized[Title/Abstract])) OR (randomly[Title/Abstract])) OR (RCT[Title/Abstract])).

Participant or population: Inclusion criteria : ①depression patients who meet the diagnostic criteria for depression in the International Classification of Diseases (10th Edition) (ICD-10);②Those with normal reading and writing functions and no communication barriers ③Patients and their family members voluntarily participate and are willing to cooperate with relevant investigations.Exclusion criteria : ①Pregnant women;②suffering from other mental diseases, serious physical diseases and organic brain diseases at the same time;③Depression caused by organic

disease and history of other mental illnesses; ④past history of schizophrenia, bipolar disorder, psychoactive substance abuse, and traumatic brain injury.

Intervention: The Mindfulness Virtual Community (MVC) program;Individualized Web-Based Exercise;Brief internet-based mindfulness intervention;A Compassion-Focused Intervention;Cognitive Behavioral Therapy (CBT); sports training;relaxation therapy; health education; acupressure, etc.

Comparator: Care as usual (CAU): The non-exposed group consisted of conventional online-based interventions and non-online-based conventional interventions.For example:The CAU-only control group was enrolled in the internet-based self-management program after post-assessment (after eight weeks).

Study designs to be included: experimental study design.

Eligibility criteria: Inclusion criteria:considered any experimental study design, including randomized controlled trials,non-randomized controlled trials, or other quasi-experimental studies, including before and after studies.Exclusion criteria:Non-Chinese and English literature; research proposals; conference papers; systematic reviews; studies in which the intervention group was drug intervention; studies for which data could not be extracted; studies that did not mention clear inclusion and exclusion criteria; the research object was a special population, such as perimenopause women, etc.

Information sources: We search for relevant studies published until June 2022 in both Chinese- and English-language databases: PubMed, CENTRAL, Embase, PsycINFO, the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Web of Science, Cochrane Library, and the Cochrane Central Register of Controlled Trials (Wiley), Clinical Trials.gov, Chinese National Knowledge Infrastructure (CNKI), Weipu (VIP), China Biology Medicine disc (CBM) and Wanfang Data.

Main outcome(s): Depressive symptoms: measured by any depression scale (such as the Self-Rating Depression Scale), or changes in the severity of depressive symptoms, as assessed against diagnostic criteria (such as the ICD 10 or the DSM-IV-TR).

Additional outcome(s): The level of autonomy in activities of daily living, cognitive function, health-related quality of life and well-being, sleeping:measured by validated instruments (such as the Lawton-Brody Instrumental Activities of Daily Living Scale, Mini-Mental State Examination, Montreal Cognitive Assessment, or the World Health Organization Quality of Life instrument [WHOQOL-100]).

Data management: Endnote X9 and RevMan 5.4.

Quality assessment / Risk of bias analysis: The risk of bias in RCT was assessed using version 5.3.0 recommended by the Cochrane Collaboration, including random allocation methods, allocation concealment, blinding, completeness of data results, selective reporting of study results, and other sources of bias. "High risk of bias", "Low risk of bias" and "Unclear" were evaluated. If the included studies fully meet these requirements, they will be graded A; if they partially meet these requirements, they will be graded B; if they do not meet these requirements at all, they will be graded C and not included. Two researchers independently assessed the quality of the literature, and higher scores indicated higher quality of literature.

Strategy of data synthesis: Meta-analysis was performed using RevMan 5.4, the official software of the Cochrane Collaboration. Since the outcome indicators in this study were all continuous variables, and the evaluation tools for each detection indicator were different, the standard mean difference (SMD) was used as the effect indicator, and the 95% CI was

the effect analysis statistic. P<0.05 means the difference is statistically significant. If the original study results were expressed as medians (quartiles), formulas were used to derive means and standard deviations; when expressed as between-group mean differences and 95% CI, SMD were calculated using the RevMan 5.4 software effect size calculator.

Subgroup analysis: If there is no heterogeneity among the results (P>0.1, $I^2$50%), a random-effects model is used for analysis, parallel subgroup analysis or sensitivity analysis.

Sensitivity analysis: If there is heterogeneity (P≤0.1, I^2>50%), a random-effects model is used for analysis , parallel subgroup analysis or sensitivity analysis. Subgroup analysis of studies that can be combined, including different intervention methods, different intervention forms, patients with different degrees of depression, different age groups, different online formats, etc.

Language: English and Chinese.

Country(ies) involved: China.

Keywords: Non-pharmacological interventions, depression, systematic review, meta-analysis.

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