

Online interventions for addressing psychological distress in people with rheumatoid arthritis and other long-term conditions: a systematic review

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Background

Psychological distress in rheumatoid arthritis (RA) is significantly higher than the general population and impacts disease activity and treatment outcomes. Online interventions have the potential to reach large numbers of patients. This study aimed to identify online interventions for psychological distress and determine their effectiveness in people with RA and other long-term conditions.

Methods

MEDLINE, EMBASE, CINAHL and PsycINFO were searched for studies published between Jan 2007 – Jul 2017. Inclusion criteria were randomised controlled trials (RCTs) measuring psychological distress in adults. Titles and abstracts were screened independently by two reviewers for relevance and design. Methodological quality was assessed by three reviewers using Cochrane Collaboration Risk of Bias Tool (differences resolved by discussion). Where information on risk of bias was lacking, authors were contacted. Data were extracted independently by four reviewers. Due to clinical heterogeneity of studies, a narrative synthesis was conducted. Effectiveness of interventions is reported based on between-groups differences in the primary outcomes at the end of study. Cohen's or Hedge's effect sizes are presented for continuous outcomes and Relative Risk for dichotomous outcomes.

Results

The review included 11 RCTs; 2 in people with arthritis, 2 multiple sclerosis, 6 diabetes and 1 irritable bowel syndrome; 8 interventions were disease-specific. The methodological quality of most studies was poor, mainly due to high attrition rate and selective reporting. Several trials used a wait-list control and follow-up was generally short (1-6 months) or not performed in the control group. Table 1 presents the interventions, outcome measures and evidence of their effectiveness. The most common intervention was cognitive behavioural therapy. Some online interventions were guided (phone, face-to-face contact to prompt action). Most interventions are not now available. Outcome measures varied significantly as the definition of distress used for this review was broad. Of the 11 interventions 9 were shown to be effective.

Conclusions

Although the findings appear to favour online interventions for addressing psychological distress, the results are inconclusive due to the overall risk of bias of included studies and insufficient evidence of their effectiveness in RA. More disease-specific interventions and good quality RCTs are required in people with RA.

ID	Disease	Intervention type	Primary Outcomes	Effectiveness (Effect size* based on between group differences)
Boeschoten 2017	Multiple sclerosis	Minder Zorgen <ul style="list-style-type: none"> disease-specific guided 	Beck Depression Inventory Second Edition (BDI-II)	Not effective (4-month follow-up). <ul style="list-style-type: none"> BDI-II: Effect size d=0.01; p=0.953
Bond 2010	Diabetes	Diabetes self-management programme <ul style="list-style-type: none"> disease-specific guided 	Center for Epidemiological Studies Depression Scale (CES-D) and Problem Areas in Diabetes (PAID) scale	Effective (6-month follow-up) <ul style="list-style-type: none"> CES-D: Effect size d= 0.7; p<0.05 PAID: Effect size d=0.6; p<0.05
Cohn 2014	Type 2 diabetes	DAHLIA <ul style="list-style-type: none"> disease-specific unguided 	Center for Epidemiological Studies Depression Scale (CES-D), Diabetes Distress Scale (DDS)	Effective (1-week follow-up) <ul style="list-style-type: none"> CES-D: Effect size d=-0.44; p=0.05 Not effective DDS: Effect size not shown
Ferwerda 2017	Rheumatoid arthritis	CBT tailored to individual goals and characteristics <ul style="list-style-type: none"> disease-specific guided 	Beck Depression Inventory (BDI) and Impact of Rheumatic Diseases on General Health and Lifestyle (IRGL) – IRGL-Negative mood & IRGL-Anxiety	Effective (12-month follow-up) <ul style="list-style-type: none"> BDI: Effect size d=0.54; p=0.001 IRGL-Negative mood: Effect size d=0.38; p=0.01 IRGL-Anxiety: Effect size d=0.48; p=0.001
Fischer 2015	Multiple sclerosis	Deprexis <ul style="list-style-type: none"> generic unguided 	Beck Depression Inventory – Second Edition (BDI-II)	Effective (9-weeks-follow-up) <ul style="list-style-type: none"> BDI-II: Effect size d=0.53; p=0.01
Hunt 2009	Irritable bowel syndrome	CBT for IBS <ul style="list-style-type: none"> disease-specific guided 	Anxiety Sensitivity Index – GI items (ASI-GI) and Anxiety Sensitivity Index – non GI items (ASI-non GI)	Effective (3-month follow-up) <ul style="list-style-type: none"> ASI-GI: Effect size d=0.63; p<0.01 ASI-non GI: Effect size d=0.70; p<0.01

Lorig 2008	Rheumatoid arthritis, osteoarthritis and fibromyalgia	Arthritis Self-Management Program <ul style="list-style-type: none"> • generic • guided 	Health Distress Scale (HDS) for RA, OA and FMS	Effective (12-month follow-up) <ul style="list-style-type: none"> • HDS-RA: Effect size: $d=0.5$ (p-value not shown) • HDS-OA: Effect size $d= 0.4$ (p-value not shown) • HDS-FMS: Effect size $d= 0.03$ (p-value not shown)
Newby 2017	Type 1 and type 2 diabetes	Internet generic CBT <ul style="list-style-type: none"> • generic • guided 	Patient Health Questionnaire (PHQ-9) and Problem Areas In Diabetes (PAID) Scale	Effective (3-month follow-up) <ul style="list-style-type: none"> • PHQ: Effect size $g=0.78$; $p<0.001$ • PAID: Effect size $g=0.80$; $p=0.01$
Nobis 2015	Type 1 and type 2 diabetes	GET.ON Mood Enhancer <ul style="list-style-type: none"> • disease-specific • guided 	Center for Epidemiological Studies Depression Scale (CES-D)	Effective (2-month follow-up) <ul style="list-style-type: none"> • CES-D: Effect size $d=0.89$; $p<0.001$
Rondags 2016	Type 1 and type 2 diabetes	HypoAware <ul style="list-style-type: none"> • disease-specific • guided 	Hypoglycaemia Fear Survey (HFS-III)	Not effective (6-month follow-up) <ul style="list-style-type: none"> • Relative Risk (RR)** of reduction in worries HFS-II: $RR=0.80$; 95% CI 0.64 to 1.01; ($p=0.059$).
Van Bastelaar 2011	Type 1 and type 2 diabetes	Diabetersgestemd <ul style="list-style-type: none"> • disease-specific • guided 	Center for Epidemiological Studies Depression Scale (CES-D)	Effective (1-month follow-up) <ul style="list-style-type: none"> • CES-D: Effect size $d=0.70$; $p<0.001$.

**Cohen's d or Hedges g where 0.2 represents small, 0.5 medium and 0.8 large effects. **Relative Risk $RR=1$ means no difference between groups and its 95%CI crossing 1, means the difference is not significant.*