Interventions to foster mental health, psychosocial support, resilience and/or stress management in patients with COVID-19 and patients with mental disorders in face of the COVID-19 pandemic – protocol for a living systematic review

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REVIEW QUESTION

Our objective is to identify and summarize the available literature of interventions that aim to promote mental health, psychosocial support, resilience and/or stress management in COVID-19 patients and patients with pre-existing mental disorders in the face of the COVID-19 pandemic.

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The living systematic review will be updated within the duration of the project **CEOsys** (https://www.ceosys.de; as part of the Network of University Medicine [Nationales Forschungsnetzwerk der Universitätsmedizin, NUM], Germany; https://www.netzwerk-universitaetsmedizin.de/projekte/ceo-sys) until June 30, 2021. The final update frequency will be determined as soon as the study selection process of the first search (in April 2021) has been completed and will be subsequently added to this protocol.

METHODS

PARTICIPANTS/POPULATION

- **Inclusion:**
  - *Patients with COVID-19*, that is, patients with confirmed active or previous diagnosed (laboratory-confirmed) SARS-CoV-2 infection, aged 18 years or older
  - *Patients with (pre-existing) mental disorders*, aged 18 years or older
  - If any of the above-mentioned groups is investigated, the study will be included irrespective of country, age, sex, health status (e.g., severity of COVID-19, type of mental disorder) and setting of study conduction (e.g., clinical setting, outpatient setting)
- **Exclusion:**
  - other target groups (e.g., general population, healthcare workers, other patient populations)

INTERVENTION(S), EXPOSURE(S)

- **Inclusion:**
  - *exposure:*
    - ○ Patients with COVID-19: exposure to COVID-19 pandemic and diagnosed (laboratory-confirmed) SARS-CoV-2 infection
    - ○ Patients with mental disorders: exposure to COVID-19 pandemic (i.e., intervention period after the first officially registered COVID-19 case in the respective country based on national infection dates published by the World Health Organization)
  - *intervention:*
    - ○ psychological and/or non-psychological interventions that aim to address mental health and/or psychosocial support and/or resilience with related concepts (e.g., hardiness, posttraumatic growth, psychological adjustment, psychological adaptation) and/or stress management (or combinations of any of these or all), for example:
      - ◊ psychological support, psychological and psychosocial interventions (e.g., psychological counselling, relaxation and mindfulness techniques, interventions focused on the promotion of psychosocial resources, self-care and self-compassion techniques, emotion regulation)
      - ◊ other non-pharmacological preventive interventions (e.g., multicomponent interventions for delirium prevention)
      - ◊ psychotherapy
      - ◊ lifestyle interventions (e.g., exercise, sleeping hygiene, nutrition, social support from family and friends, positive activities, regeneration)
      - ◊ pharmacological interventions (e.g., antidepressant therapy)
    - ○ If the above criteria are fulfilled, studies will be included irrespective of:
      - ◊ intervention setting (i.e., group, individual, or combined setting)
      - ◊ delivery format of the intervention (i.e., face-to-face, online/computer, mobile-based with smartphone app, text, video material, audio, book-based, combination)

◊ place of implementation (e.g., inpatient/ outpatient, private setting, combination)
◊ intervention providers (e.g., non-guided self-help, guided self-help, therapist-delivered, combination)
◊ training duration or intensity
◊ theoretical approach used in the intervention (e.g., cognitive behavior therapy [CBT], mindfulness, combined approaches)
◊ for patients with mental disorder: intervention conducted before, during, or in the aftermath of COVID-19 pandemic outbreak

- **Exclusion:**
  - *exposure:*
    o Patients with COVID-19: individuals with suspected, but not confirmed SARS-CoV-2 infection
  - *intervention:*
    o interventions for infection prevention and/or control
    o hygiene education (if no focus on fostering mental health or any of the other constructs)
    o interventions to increase vaccination rates and/or vaccination acceptance
    o experimental studies to test the effect of health communication manipulation

COMPARATOR(S)/ CONTROL

All (no intervention control, wait-list control, treatment as usual, attention control)

TYPES OF STUDIES TO BE INCLUDED

- **Inclusion:**
  - Quantitative, qualitative and mixed-methods studies focusing on measuring the effects of the above-defined interventions:
    o Randomized controlled trials (including cRCTs)
    o Quasi-randomized controlled trials (e.g., quasi-randomized controlled trial, controlled clinical trial)
    o Non-randomized controlled trials (e.g., controlled before-after study, ITS with comparison group)
    o Single-arm trials: non-comparative study (e.g., case report), before-after studies, ITS without comparison group
    o respective study protocols
    o letters to the editor and commentaries (if they report the results of original intervention research)
- **Exclusion:**
  - theoretical/discussion papers
    editorials, letters to the editor, commentaries (if they do not report the results of original intervention research)
  - reviews (for systematic reviews: although these will be excluded at the title/abstract screening stage, the reference lists of relevant reviews [i.e., reviews potentially including primary studies of interest] will be hand searched for further relevant studies)

PUBLICATION DATE
No restrictions

PUBLICATION LANGUAGE
No restrictions (translation of non-English articles)

PUBLICATION FORMAT
No restrictions (preprints will be included)

CONTEXT

Studies conducted among patients with COVID-19 and patients with mental disorders in the face of current COVID-19 pandemic, diverse settings

MAIN OUTCOMES

Mental health or mental burden or psychological distress, with a broad range of eligible outcomes

Primary outcomes

1. anxiety symptoms
2. depressive symptoms
3. (perceived) stress
4. posttraumatic stress symptoms

Secondary outcomes

1. sleep problems and/or sleep quality
2. general psychological distress
3. substance abuse, substance use disorder
4. self-harm, suicidal ideation, suicidality, suicide
5. loneliness
6. well-being, life satisfaction, quality of life
7. resilience

The missing reporting of the above described primary or secondary outcomes is not an exclusion criterion in this review.

SEARCH STRATEGY

- **Electronic databases:**
    - MEDLINE Ovid
    - Cochrane Covid-19 Register (CC19R)
    - Cochrane Central Register of Controlled Trials (CENTRAL)
    - PsycINFO Ovid
    - Web Of Science (Core Collection)
- **Additional sources:** In addition to the electronic search, we will inspect the reference lists of all included studies and of relevant systematic reviews. If data are missing or unclear, we will contact the respective author.

The search strategy will be developed by an experienced information specialist (Maria-Inti Metzendorf) and will undergo a quality assessment by a second information specialist (Robin Featherstone). The strategy will comprise three blocks of search terms: 1) terms related to the COVID-19 pandemic (e.g., "COVID-19", "SARS coronavirus 2"), 2) terms associated with COVID-19 patients and patients with mental disorders as population of interest (e.g., "COVID-19 patient*", "psychiatric patient*", "patient* with mental disorder"), and 3) terms related to mental health (e.g., "mental health"). As appropriate for each database, different search terms and synonyms (e.g., MeSH terms, text words) are used. The timespan will be restricted from 2020 to current. Updates will be performed within the duration of the CEOsys project until June 30, 2021. The final search frequency will be determined as soon as the study selection process of the first search (in April 2021) has been completed.

DATA EXTRACTION (SELECTING AND CODING)

Two reviewers will independently screen the titles and abstracts of identified records to assess eligibility. Irrelevant papers will be excluded immediately. At full text level, the eligibility of relevant papers will also be checked in duplicate. Any disagreement will be resolved by discussion or by consulting a third reviewer. We will use EndNote to collect and de-duplicate studies. In order to

accelerate the screening process and to guarantee an efficient workflow, we will use the systematic review software EPPI Reviewer[1]. The full-text screening will also be performed using EPPI Reviewer. Inter-rater reliability for both title/abstract and full text screening will be calculated, and the screening process will be reported in a preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow diagram[2].

We will develop a customized data extraction sheet including the following information:
- full citation
- country
- participant characteristics (e.g., sociodemographic data, sample size)
- studied subpopulation (e.g., COVID-19 patients, patients with mental disorders)
- study design (e.g., RCT or non-randomized study; quantitative or qualitative study)
- intervention name, intervention setting (e.g., group setting), delivery (e.g., face-to-face), theoretical approach (e.g., CBT), intervention providers, intervention content
- control group (if available)
- outcomes and time points assessed, with outcome measures used
- results (i.e., reported quantitative [e.g., means and standard deviations, SDs] and/or qualitative effects of the intervention, for example, on mental health outcomes, resilience etc.)
- miscellaneous aspects (e.g., cut-off values of the outcome measures used).

The data will be extracted by two reviewers, working independently. Any disagreements will be resolved by discussion or by consulting a third reviewer.
The process will adhere to the PRISMA standards[2].

DATA ANALYSIS

Risk of bias (quality) assessment for randomized controlled trials (RCTs)

The risk of bias of RCTs will be assessed independently and in duplicate using the following five domains of the revised Cochrane risk-of-bias tool for randomized trials (RoB 2)[3]:
1. Risk of bias arising from the randomization process
2. Risk of bias due to deviations from the intended interventions
3. Missing outcome data
4. Risk of bias in measurement of the outcome
5. Risk of bias in selection of the reported result

In addition to the risk of bias in each domain, the overall risk of bias at the study and outcome level will be assessed. Judgements can be "low" or "high" risk of bias or can express "some concerns".

Risk of bias (quality) assessment for non-randomized trials (NRTs)

The risk of bias of NRTs will be assessed independently and in duplicate using the following seven domains of the "Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I)" tool for non-randomized trials[4]:

1. confounding (pre-intervention)
2. selection bias (pre-intervention)
3. information bias (at-intervention)
4. confounding (post-intervention)
5. selection bias (post-intervention)
6. information bias (post-intervention)
7. reporting bias (post-intervention)

In addition to the risk of bias in each domain, the overall risk of bias at the study and outcome level will be assessed. Judgements can be "low risk of bias", "moderate risk of bias", "serious risk of bias",

"critical risk of bias" and "no information". Adapted versions of the tool will be used as intended for follow-up studies, (uncontrolled) before-after studies and controlled before-after studies.

Any disagreements arising from the quality assessment for RCTs and NRTs will be resolved by discussion or by consulting a third reviewer.

Assessment of the certainty of evidence

The certainty of evidence will be assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE)[5] by one reviewer; the results will be discussed in the review team.

Data synthesis

Based on the extracted data, we will carry out a narrative synthesis of the included studies describing the study characteristics, interventions and measured outcomes in text and tabular form.

If the included studies are sufficiently homogeneous (e.g., intervention design, time point of the intervention, study design and outcome measures assessed) and in case of available data, we will perform pairwise meta-analyses (e.g., RCTs, controlled before-after studies: intervention group vs. control group; controlled/uncontrolled before-after studies: pre-intervention vs. post-intervention) for different mental health outcomes (e.g., resilience, anxiety, depression, stress), in order to determine pooled intervention effects of interventions to foster mental health, psychosocial support, resilience and/or stress management in the patient populations. NRTs considered to be at critical risk of bias will be excluded from these analyses. In addition, NRTs with different study designs (e.g., follow-up studies, uncontrolled before-after studies, controlled before-after studies) will only be combined in a meta-analysis if they address the same research question[6].

Meta-analyses both for RCTs and NRTs will be conducted if the same outcome is assessed in at least two studies, if the studies do not differ excessively in their content and, in case of RCTs, if studies at high risk of bias do not prevail. RCTs and NRTs will *not* be combined in a meta-analysis.

For continuous outcomes, we will calculate standardized mean differences (SMDs, Hedge's g) and their respective 95% confidence intervals (CIs) as pooled effect estimates based on means, standard deviations (SDs) and sample sizes (e.g., between-group comparison of intervention and control group at post-intervention and, if possible, at different follow-up periods). If means and SDs are not available, we will contact the study authors to ask for the respective values or use alternative statistical information (e.g., t test, change score).

For studies reporting dichotomous outcomes (e.g., prevalence with number of participants below and above cut-off score for mental health outcome in intervention and control group), we will contact the study authors to ask for the respective means, SDs and sample sizes in order to eventually calculate SMDs as well. If these values cannot be obtained by the authors, we plan to calculate the prevalence risk ratio (RR) as pooled effect estimate, with uncertainty being expressed using 95% CIs.

Since we anticipate a considerable between-study heterogeneity in the reported assessment tools[7-9], pairwise meta-analyses will be performed based on random-effect models. In addition to the inspection of the clinical and methodological between-study diversity, we will investigate the statistical heterogeneity using different statistical indicators (e.g., I^2, Tau^2, Chi^2 test, 95% CI prediction intervals).

A sensitivity analysis will be performed based on the quality assessment, by excluding studies judged to be of high risk of bias. Depending on the evidence found, further sensitivity analyses will be added during the review development process.

The statistical analyses will be performed using Review Manager 5.4 (RevMan 5.4)[10] or R 4.0.3 (e.g., libraries meta, metafor, metasens)[11-14], if appropriate.

If pairwise meta-analyses are not possible (e.g., lack of evidence, clinical and methodological diversity, statistical heterogeneity), we will use a combination of statistical synthesis (e.g., vote counting based on the direction of effect) and visual presentation (e.g., effect direction plot), following the SWiM reporting guidelines and the recommendations in the Cochrane Handbook.[15,16]

ANALYSIS OF SUBGROUPS OR SUBSETS

The publications will be clustered by the following characteristics:
- *population characteristics*
  - age
  - geographical location (e.g., country or region)
  - subpopulation of patients (e.g., patients with COVID-19, patients with pre-existing mental disorders)
  - severity of disease (e.g., hospitalization, intensive care, ventilation, severity score, number of mental disorders, if appropriate)
- *intervention characteristics*
  - setting (e.g., group, individual, combined)
  - delivery format (e.g., face-to-face, online, mobile-based, video, book-based)
  - training duration/intensity
  - theoretical approach (e.g., CBT, mindfulness, combined approaches)

Quantitative subgroup analyses and/or meta-regression regarding *intervention characteristics* will be conducted for the primary outcomes if an adequate number of studies (at least 10 in the meta-analysis per outcome) is available.

Further potentially relevant subgroups will be added during the review development process.

TYPE AND METHOD OF REVIEW

Living systematic review; living synthesis; narrative and quantitative synthesis; meta-analysis

KEYWORDS

Mental health, psychosocial support, resilience, stress management, intervention, pandemic, SARS-CoV-2, COVID-19, patients, COVID-19 patients, mental disorder, psychiatric

<u>**GENERAL INFORMATION**</u>

START DATE: April 2021

(ANTICIPATED) COMPLETION DATE: May 2021

LANGUAGE: English

COUNTRY: Germany

CURRENT REVIEW STATUS
Preliminary searches: not started
Piloting of the study selection process: not started
Screening of search results against eligibility criteria: not started
Data extraction: not started
Risk of bias assessment: not started
Data analysis: not started

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APPENDIX
Search strategy will be added