



MENTUPP

Systematic review protocol

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TERVEYDEN JA HYVINVOINNIN LAITOS	THL	5	Beneficiary
THE UNIVERSITY OF STIRLING	NMAHP-RU	6	Beneficiary
SEMMELWEIS EGYETEM	SEM	7	Beneficiary
STICHTING KENNISCENTRUM PHRENOS	PHRENOS	8	Beneficiary
QENDRES SE SHENDETIT DHE MIREQENIES KOMUNITARE	CCHW	9	Beneficiary
ZYRA PER SHENDET MENDOR	ZSMKOS	10	Beneficiary
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE ROYAL CHARTER	LHSTM	11	Beneficiary
CONSORCIO MAR PARC DE SALUT DE BARCELONA	IMIM	12	Beneficiary
NATIONAL SUICIDE RESEARCH FOUNDATION	NSRF	13	Beneficiary
INTERNATIONAL ASSOCIATION FOR SUICIDE PREVENTION	IASP	14	Beneficiary
PINTAIL LTD	PT	15	Beneficiary
GRIFFITH UNIVERSITY	AISRAP	16	Beneficiary
MATES IN CONSTRUCTION (AUST) LTD	MIC	17	Beneficiary

Systematic review protocol

Version History

Version number (date)	Details
1.0 (03.05.20)	Initial submission to EC
2.0 (19.03.21)	Changed MINDUP to MENTUPP throughout the deliverable

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1 Executive Summary

The D2.1 deliverable includes three protocols for three parallel systematic literature reviews registered with Prospero. The protocols are structured according to the requirements set out for a Prospero registration. They follow the same methodology, but are slightly different in relation to details, such as keywords and databases to be searched.

The systematic reviews will synthesise the published literature on the effectiveness of organization-level workplace mental health promotion on mental health and wellbeing of workers and organizational outcomes. The proto-type protocol will be amended by slightly different search strategies for each sector.

The protocols spell out the detailed methodology for conducting the three parallel systematic reviews to produce a comprehensive scientific evidence base of interventions conducted in the three sectors. Specifically the protocol serves as a blueprint for the researchers to carry out the literature searches, detail the inclusion and exclusion criteria for studies, and set the method of data extraction and data synthesis.

The results of the systematic reviews based on these protocols will inform the development of sector-tailored intervention tools addressing non-clinical mental health problems and mental wellbeing of WP2.

2 Introduction & Background

MENTUPP aims to improve mental health and wellbeing in the workplace by developing, implementing and evaluating a comprehensive, multilevel intervention targeting both clinical (depressive, anxiety disorders) and non-clinical (stress, burnout, wellbeing, depressive symptoms) mental health issues, as well as combating the stigma of mental (ill-) health.

The particular aim of WP2 is to develop tools addressing the MENTUPP Component A interventions for wellbeing, stress, burnout and non-clinical depressive and anxiety symptoms. The focus is on primary-level interventions.

The aim of the systematic literature reviews is to establish a comprehensive scientific evidence-base of the effectiveness of mental health interventions specific to the three MENTUPP intervention sectors, i.e. healthcare, ICT and construction. For this purpose, three parallel systematic reviews will be conducted, each summarising the evidence on the effectiveness of mental health promotion programmes in addressing non-clinical depression, stress, wellbeing, burnout and mental wellbeing. While the reviews will focus on studies conducted in one of the three sectors, we will also synthesize intervention principles that may be effective in other industrial sectors.

Once accepted in the register, the protocols will remain publicly posted on the PROSPERO website (<https://www.crd.york.ac.uk/prospero/>) to foster transparency and replicability.

The findings of the systematic reviews will inform the development of the intervention tools to be developed by WP2 and then to be rolled out by WP7 in the pilot phase and by WP9 in the trial phase. We will disseminate preliminary findings of the systematic reviews to all partners in June and produce a completed summary report in October.

3 Approach

The protocol was developed collaboratively by three partners: UCC, with NRCWE and THL. We held regular online ZOOM meetings for discussion and circulated protocol drafts for feedback. We also involved a subject librarian from UCC with expertise in library information science for support in developing the search strategies.

To avoid content overlap with the deliverables of other work packages and to synchronize methodology, we stayed in contact with WP3, WP4 and WP5 and mutually exchanged protocol drafts. Researchers in work package 5 will also conduct a systematic review, however this review will focus on process evaluation studies of workplace mental health interventions with the aim to summarise barriers and facilitators to implementation. The systematic review of WP4 will focus on the review of best practice of anti-stigma interventions and the systematic review conducted in WP3 focuses on individual-level interventions and severe mental health outcomes.

The protocol was peer-reviewed by a MENTUPP team member as part of our internal quality control and his comments were incorporated.

The development of the inclusion and exclusion criteria for studies was guided by two main criteria:

- To obtain a comprehensive review of the most recent high-quality evidence
- To include a manageable number of relevant studies

4 Results

First, we developed a prototype approach with following characteristics:

- Only published literature will be considered and the grey literature will be excluded. Grey literature will be included in the systematic review on implementation issues of workplace mental health promotion programmes conducted by WP5.
- The systematic reviews will be limited to interventions with an organizational-level component only, excluding those interventions that solely target the individual (e.g. individual counselling, referral to mental health services) owing to WP2's focus on the development of primary-level interventions.
- Only original studies with publication dates not older than 10 years back will be included to reflect the most up-to-date evidence.
- Primary outcomes were clearly limited to mental wellbeing outcomes and sub-clinical mental health problems.
- The three reviews will be managed in the Rayyan reference software (<https://rayyan.qcri.org/welcome>) to allow easy collaboration, the easy use of blinded reviewers and exchange of publications.

Second, we applied the prototype approach to three separate parallel systematic review protocols, one systematic review for each sector (healthcare, ICT, construction) with use of the same general review methodology. The separate reviews will provide focussed and comprehensive evidence to inform the development of sector-tailored intervention tools. The individual protocols will be amended by three slightly different search strategies that include the sector-specific search terms.

5 Impact and conclusions

After Prospero registration we will start with data extraction. The next steps for WP2 researchers will involve the literature searches and the screening of the retrieved articles for eligibility following the procedures outlines in the protocols. The evidence of the reviews will be synthesized in the format of a summary for each sector with specific reference to SMEs and, if appropriate, gender differences. We will collaborate with WP5 and exchange relevant identified literature. The finalised summaries will inform the development of the online primary prevention tools for targeting non-clinical depression, anxiety, stress and burnout, with content tailored to each of the three SME work sectors. Each of the systematic reviews will also be written-up as scientific manuscript for submission to a scientific journal. The findings of the systematic reviews will inform the development of the intervention tools to be developed by WP2 and then to be rolled out by WP7 in the pilot phase and by WP9 in the trial phase.

6 Appendices

Appendices to this deliverable:

Appendix 1 Systematic review protocol for Healthcare

Appendix 2 Systematic review protocol for ICT

Appendix 3 Systematic review protocol for Construction

Appendix 4 Prospero Registration acknowledgement Healthcare

Appendix 5 Prospero Registration acknowledgement ICT

Appendix 6 Prospero Registration acknowledgement Construction

Systematic review

This record cannot be edited because it is being assessed by the editorial team

1. * Review title.

Give the working title of the review, for example the one used for obtaining funding. Ideally the title should state succinctly the interventions or exposures being reviewed and the associated health or social problems. Where appropriate, the title should use the PI(E)COS structure to contain information on the Participants, Intervention (or Exposure) and Comparison groups, the Outcomes to be measured and Study designs to be included.

Systematic review of the effect of organization-level workplace mental health interventions on mental health and wellbeing in healthcare workers

2. Original language title.

For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

n/a

3. * Anticipated or actual start date.

Give the date when the systematic review commenced, or is expected to commence.

04/05/2020

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

31/03/2021

5. * Stage of review at time of this submission.

Indicate the stage of progress of the review by ticking the relevant Started and Completed boxes. Additional information may be added in the free text box provided.

Please note: Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. Should evidence of incorrect status and/or completion date being supplied at the time of submission come to light, the content of the PROSPERO record will be removed leaving only the title and named contact details and a statement that inaccuracies in the stage of the review date had been identified.

This field should be updated when any amendments are made to a published record and on completion and publication of the review. If this field was pre-populated from the initial screening questions then you are not able to edit it until the record is published.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here (e.g. Funded proposal, protocol not yet finalised).

6. * Named contact.

The named contact acts as the guarantor for the accuracy of the information presented in the register record.

Birgit Greiner

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Dr Greiner

7. * Named contact email.

Give the electronic mail address of the named contact.

b.greiner@ucc.ie

8. Named contact address

PLEASE NOTE this information will be published in the PROSPERO record so please do not enter private information

Give the full postal address for the named contact.

University College Cork\School of Public Health\Western Gateway Building, 4th floor\Western Road, Cork Ireland

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

00353214205507

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University College Cork, School of Public Health

Organisation web address:

ucc.ie

11. * Review team members and their organisational affiliations.

Give the personal details and the organisational affiliations of each member of the review team. Affiliation refers to groups or organisations to which review team members belong. **NOTE: email and country are now mandatory fields for each person.**

Dr Birgit Greiner. University College Cork

Dr Birgit Aust. National Research Centre for the Working Environment, Copenhagen

Dr Johanna Cresswell-Smith. Finnish Institute for Health and Welfare, Helsinki

Dr Caleb Leduc. University College Cork, School of Public Health

Professor Reiner Rugulies. National Research Centre for the Working Environment, Copenhagen

Professor Kristian Wahlbeck. Finnish Institute for Health and Welfare, Helsinki

Dr Clíodhna O'Connor. University College Cork

12. * Funding sources/sponsors.

Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Include any unique identification numbers assigned to the review by the individuals or bodies listed.

The project has received funding from the European Union's Horizon 2020 research and innovation programme.

Grant number(s)

Grant agreement No. 848137

13. * Conflicts of interest.

List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.

Yes

Birgit Greiner gives talks and workshops on this topic without payment and compensation of costs. Kristian Wahlbeck is employed by a non-profit mental health Non-Governmental Organisation (NGO) which implements national mental health promotion initiatives. Birgit Aust and Reiner Rugulies work for a non-profit research institute under the Danish Ministry of Labour and conduct mental health research and give talks about the topic as part of their work. The other authors (JCW, CL, CO'C) declare that they have no known conflicts of interest.

14. Collaborators.

Give the name and affiliation of any individuals or organisations who are working on the review but who are not listed as review team members. **NOTE: email and country are now mandatory fields for each person.**

Professor Ella Arensman. University College Cork, School of Public Health and National Suicide Research Foundation

15. * Review question.

State the question(s) to be addressed by the review, clearly and precisely. Review questions may be specific or broad. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS where relevant.

1. Do organizational-level mental health promotion programmes impact on mental health and wellbeing in healthcare workers?
2. Do organizational-level mental health promotion programmes impact on mental health and wellbeing in healthcare workers specifically in small and medium-sized enterprises (SMEs)?

The ultimate aim of these review questions is to provide robust evidence that informs the development of mental health promotion tools particularly for the use in healthcare SMEs.

16. * Searches.

State the sources that will be searched. Give the search dates, and any restrictions (e.g. language or publication period). Do NOT enter the full search strategy (it may be provided as a link or attachment.)

Searching will begin 04 May 2020 and include all published literature from the past 10 years (01 January 2010) and limited to the English language. Databases include Academic Search Ultimate, CINAHL Complete, PsycINFO, Scopus, PubMed and Web of Science Core Collection.

We are using iterative methods to develop and apply a rigorous and comprehensive search strategy, combining a series of free text terms and MeSH terms for key concepts according to a PICO format:(a) healthcare sector workers, AND (b) workplace programmes/interventions, AND (c) mental health/wellbeing.

The strategy is being developed in conjunction with subject librarian at the host institution and peer-reviewed in accordance with PRESS guidelines. Boolean operators will be used to maximise the penetration of search terms with application of "wild cards" to account for plurals, variations in databases and spelling.

The reference lists of all eligible studies and relevant review articles will be reviewed manually for additional relevant studies. Searches will be re-run immediately prior to the final analyses and any further studies identified will be considered for inclusion. Unpublished studies, including grey literature, are not eligible for inclusion.

17. URL to search strategy.

Give a link to a published pdf/word document detailing either the search strategy or an example of a search strategy for a specific database if available (including the keywords that will be used in the search strategies), or upload your search strategy.

Do NOT provide links to your search results.

Do not make this file publicly available until the review is complete

18. * Condition or domain being studied.

Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Mental health and mental wellbeing in the workplace.

We will specifically address non-clinical depression, perceived stress and burnout as indicators for mental health.

19. * Participants/population.

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

We will include all studies that were conducted with the following populations:

- Workers in the healthcare sector involved in the direct delivery of healthcare activities and/or their management. Occupations include, but are not limited to, nurses, doctors, dentists, physiotherapists, eldercare workers and care assistants.
- Fully employed or sub-contracted workers
- Full-time or part-time workers

Exclusion criteria

- Mainly non-working populations (unemployed, retired, long-term sick leave)
- Populations not working in healthcare
- Apprentices or workers in training
- Clinical populations with mental health disorders

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the nature of the interventions or the exposures to be reviewed.

Study must evaluate an organizational-level mental health promotion intervention aimed at improving workers' mental health and/or wellbeing or protecting workers from mental health symptoms or disorders, at the level of the organization by changing aspects of the psychosocial work environment (e.g., organizational policies, leadership style, workplace culture, working conditions) or through systematic training of work-related competencies. Interventions can involve mental health knowledge and awareness building in the organization or programs to train managers to initiate workplace changes for the promotion of mental health. Multi-level interventions targeting organizational and individual changes will also be included.

We will exclude

- Individual-level interventions solely aimed at changing employees' individual coping skills or behaviour (e.g., mindfulness, stress resilience) and not embedded into the organisation.
- Health promotion not primarily targeted at mental but at physical health (e.g., cholesterol screening, nutrition or ergonomics).
- Mental health interventions not formally implemented in the workplace (e.g., signposting work-related mental health interventions freely available online without association to an organization).
- Interventions that solely target individuals with a defined mental health disorder or disease for treatment and referral.
- Interventions that solely target return-to-work after absenteeism due to mental health difficulties.
- Evaluations focussing exclusively on the economic effects of mental health interventions (e.g, ROI studies, Cost-Benefit analyses).

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

Control groups will include groups with a placebo intervention, no intervention, groups with a different mental health promotion intervention or with a different delivery mode of a workplace mental health promotion programme.

22. * Types of study to be included.

Give details of the types of study (study designs) eligible for inclusion in the review. If there are no restrictions on the types of study design eligible for inclusion, or certain study types are excluded, this should be stated. The preferred format includes details of both inclusion and exclusion criteria.

We will be pursuing a staged approach in the systematic review (Polen et al, 2008).

In stage 1, only studies with a control group will be deemed eligible for inclusion as they are likely to provide the most robust evidence, i.e., randomized control trials (RCT), cluster-randomized control trials (cRCT), controlled before- and after- designs and controlled quasi-experimental studies.

After completion of stage 1, the entire team will meet to discuss whether there is sufficient evidence to answer the review questions with a view to generate evidence that informs the development of mental health promotion tools particularly for SMEs in healthcare. If the evidence is deemed not sufficient, we will move to stage 2.

In stage 2, also uncontrolled before- and after- designs and uncontrolled quasi-experimental designs will be included in the review.

Studies using solely qualitative research methods will be excluded.

23. Context.

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

A particular emphasis in the data synthesis will be placed on the effects of organization-level mental health interventions within small- and medium-sized enterprises within healthcare utilizing European Commission's Small and Medium-Sized Enterprises (SME)'s definition of having less than 250 persons employed (https://ec.europa.eu/regional_policy/sources/conferences/state-aid/sme/smedefinitionguide_en.pdf).

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.

Primary outcomes:

Mental wellbeing, depressive symptoms, anxiety symptoms, burnout, perceived job stress.

These outcomes should be measured by validated scales rather than single items.

During our searches, we will include search terms for the primary outcomes but not for the secondary outcomes. For eligible studies found through these searches, we will also report the results for the secondary outcomes in the review.

Exclude:

Presenteeism, diagnosed mental health disorders, turnover intention, productivity, culture, mental health stigma, suicide, suicidal ideation, substance abuse.

* Measures of effect

not restricted

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state 'None' or 'Not applicable' as appropriate to the review

Secondary outcomes:

Absenteeism from work, especially where available linked to mental health or wellbeing issues.

Psychosocial work environment changes, specifically work demands, control/influence, social support by peers and by supervisors/managers measured by validated scales.

* Measures of effect

not restricted

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

One reviewer will conduct and save each search on the respective databases. Study selection will be conducted using Rayyan QCRI with reviewer blinding feature. The Rayyan software will identify duplicates. One reviewer will resolve duplicates proposed by Rayyan ("Unresolved" section). The final number of duplicates will be recorded.

Screening of title and abstracts will be conducted by one reviewer, while the second reviewer will complete a blinded review of a random sample 25% of the titles. The random sample will be generated by using an electronic random number generator. An agreement of 95% of the sub-sample or higher between the two reviewers will be considered satisfactory and the remaining 75% will be screened by one reviewer only. If the agreement is below 95% all retrieved titles and abstracts will be screened by two reviewers.

Articles selected for full-text review will be exported to EndNote. Blinded fulltext review will facilitate a final decision on inclusion or exclusion be completed by two reviewers. Any discrepancy between two reviewers will be resolved through discussion with a third reviewer resolving disagreement. PRISMA flow diagrams will be informed by both EndNote and Rayyan features.

27. * Risk of bias (quality) assessment.

Describe the method of assessing risk of bias or quality assessment. State which characteristics of the studies will be assessed and any formal risk of bias tools that will be used.

All studies will be assessed for risk of bias by two independent reviewers and disagreements will be discussed among the reviewers. In the event that a disagreement cannot be resolved, a third reviewer will be consulted.

The quality of each included study will be appraised using the QATQS scale (National Collaborating Centre for Methods and Tools, 2008), which assesses 6 areas: (1) selection bias, (2) design, (3) confounders, (4) blinding, (5) data collection method, and (6) withdrawals and drop-outs. Results will be scored on a scale from 1 to 3, where 1 is strong, 2 moderate and 3 weak.

In the event of missing information, the authors will be contacted to provide the missing details.

28. * Strategy for data synthesis.

Provide details of the planned synthesis including a rationale for the methods selected. This **must not be generic text** but should be **specific to your review** and describe how the proposed analysis will be applied to your data.

We will provide a narrative synthesis of the findings from the included studies, structured around the efficiency of the mental health intervention programmes to achieve the mental health outcomes. More specifically, descriptive data and estimates of effect with 95% confidence intervals from included studies will be tabulated and brought together using a narrative synthesis supported by evidence tables and figures to summarise the evidence. In the case of missing data, we will contact the authors.

The narrative synthesis will be guided by the aim to identify which types of interventions are efficient or not to positively promote mental health and wellbeing and to protect mental health in healthcare workplaces with a view to provide the best evidence base for the development of new intervention tools for the healthcare sector tailored to the use in SMEs. The focus is on organization-level interventions including primary and secondary interventions. The synthesis will be guided by the integrated intervention approach for workplace mental health (La Montagne et al, 2014) and structured according to (a) interventions for promotion of mental wellbeing and (b) interventions for the protection of mental health problems. Interventions for the promotion of mental wellbeing include those interventions that improve positive aspects of work and workers' strengths and capacities. Interventions for the protection of mental health and wellbeing include interventions to reduce work risks in the psychosocial work environment. The third element of this model, 'manage illness', represents tertiary intervention and will not be addressed in this review.

A narrative synthesis approach was selected as organization-level interventions tend to be heavily influenced by their local context which vary across organizations and regions. As a result, and given the broad range of outcome measures used in organization-level mental health intervention literature, it not expected that a meta-analysis would be meaningful.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

Several specific subgroups will be investigated, specifically the effectiveness of studies conducted in small to medium-sized enterprises as compared to studies conducted in large organizations. We will also study in detail the gender-specific aspects of mental health promotion in the generally female-dominated healthcare sector, if

possible, and investigate types of employment, such as part-time, full-time worker, employed versus subcontracted. Should data permit, we aim to describe the scope of interventions by subgroup and differentiate the effects of the interventions on the various subgroups.

30. * Type and method of review.

Select the type of review and the review method from the lists below. Select the health area(s) of interest for your review.

Type of review

Cost effectiveness	No
Diagnostic	No
Epidemiologic	No
Individual patient data (IPD) meta-analysis	No
Intervention	Yes
Meta-analysis	No
Methodology	No
Narrative synthesis	Yes
Network meta-analysis	No
Pre-clinical	No
Prevention	No
Prognostic	No
Prospective meta-analysis (PMA)	No
Review of reviews	No
Service delivery	No
Synthesis of qualitative studies	No
Systematic review	Yes
Other	No

Health area of the review

Alcohol/substance misuse/abuse	No
Blood and immune system	No
Cancer	No
Cardiovascular	No
Care of the elderly	No
Child health	No

Complementary therapies	No
COVID-19	No
Crime and justice	No
Dental	No
Digestive system	No
Ear, nose and throat	No
Education	No
Endocrine and metabolic disorders	No
Eye disorders	No
General interest	No
Genetics	No
Health inequalities/health equity	No
Infections and infestations	No
International development	No
Mental health and behavioural conditions	Yes
Musculoskeletal	No
Neurological	No
Nursing	No
Obstetrics and gynaecology	No
Oral health	No
Palliative care	No
Perioperative care	No
Physiotherapy	No
Pregnancy and childbirth	No
Public health (including social determinants of health)	No
Rehabilitation	No
Respiratory disorders	No
Service delivery	No
Skin disorders	No

Social care	No
Surgery	No
Tropical Medicine	No
Urological	No
Wounds, injuries and accidents	No
Violence and abuse	No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English

There is not an English language summary

32. * Country.

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved.

Denmark

Finland

Ireland

33. Other registration details.

Give the name of any organisation where the systematic review title or protocol is registered (such as with The Campbell Collaboration, or The Joanna Briggs Institute) together with any unique identification number assigned. (N.B. Registration details for Cochrane protocols will be automatically entered). If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

n/a

34. Reference and/or URL for published protocol.

Give the citation and link for the published protocol, if there is one

n/a

No I do not make this file publicly available until the review is complete

35. Dissemination plans.

Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 848137. The review will inform the development of the "Mental Health Promotion and Intervention in the Workplace" or MENTUPP Intervention (<https://www.mentuppproject.eu/>) tailored for employees in the construction, health care and ICT sectors, specifically in SMEs.

The project aims to improve mental health and wellbeing and reduce stigma associated with mental health difficulties, while also reducing absenteeism and improving productivity in small- and medium-sized enterprises across 17 European countries as well as Australia. Specifically, the MENTUPP project aims to develop a hub of online tools comprising specific interventions for primary-, secondary- and tertiary-level workplace interventions for preventing, detecting, and treating defined mental health disorders as well as sub-clinical mental health problems, for promoting wellbeing and for combating the stigma around mental health issues. The results of the review will therefore be critical in both guiding and informing the development of effective intervention content for MENTUPP. The review will be disseminated across the MENTUPP consortium of partners in addition to being submitted for publication in an open access peer-reviewed journal.

Do you intend to publish the review on completion?

No

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords will help users find the review in the Register (the words do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

healthcare worker, health care worker, workplace mental health; occupational mental health; organizational intervention; mental wellbeing; depression; anxiety; burnout; mental health promotion; stress prevention.

37. Details of any existing review of the same topic by the same authors.

Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

n/a

38. * Current review status.

Review status should be updated when the review is completed and when it is published. For newregistrations the review must be Ongoing.

Review_Ongoing

39. Any additional information.

Provide any other information the review team feel is relevant to the registration of the review.

Additional MENTUPP partners will contribute to the systematic review based on an application of intent with the MENTUPP consortium.

40. Details of final report/publication(s).

This field should be left empty until details of the completed review are available.

Systematic review

This record cannot be edited because it is being assessed by the editorial team

1. * Review title.

Give the working title of the review, for example the one used for obtaining funding. Ideally the title should state succinctly the interventions or exposures being reviewed and the associated health or social problems. Where appropriate, the title should use the PI(E)COS structure to contain information on the Participants, Intervention (or Exposure) and Comparison groups, the Outcomes to be measured and Study designs to be included.

Systematic review of the effect of organization-level workplace mental health interventions on mental health and wellbeing in the information and communication technology sector

2. Original language title.

For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

n/a

3. * Anticipated or actual start date.

Give the date when the systematic review commenced, or is expected to commence.

04/05/2020

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

31/03/2021

5. * Stage of review at time of this submission.

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This field should be updated when any amendments are made to a published record and on completion and publication of the review. If this field was pre-populated from the initial screening questions then you are not able to edit it until the record is published.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here (e.g. Funded proposal, protocol not yet finalised).

6. * Named contact.

The named contact acts as the guarantor for the accuracy of the information presented in the register record.

Birgit Greiner

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Dr Greiner

7. * Named contact email.

Give the electronic mail address of the named contact.

b.greiner@ucc.ie

8. Named contact address

PLEASE NOTE this information will be published in the PROSPERO record so please do not enter private information

Give the full postal address for the named contact.

University College Cork\School of Public Health\Western Gateway Building, 4th floor\Western Road, Cork Ireland

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

00353214205507

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University College Cork, School of Public Health

Organisation web address:

ucc.ie

11. * Review team members and their organisational affiliations.

Give the personal details and the organisational affiliations of each member of the review team. Affiliation refers to groups or organisations to which review team members belong. **NOTE: email and country are now mandatory fields for each person.**

Dr Birgit Greiner. University College Cork, School of Public Health

Dr Birgit Aust. National Research Centre for the Working Environment, Copenhagen

Dr Johanna Cresswell-Smith. Finnish Institute for Health and Welfare, Helsinki

Professor Reiner Rugulies. National Research Centre for the Working Environment, Copenhagen

Dr Caleb Leduc. University College Cork, School of Public Health

Professor Kristian Wahlbeck. Finnish Institute for Health and Welfare, Helsinki

Dr Clíodhna O'Connor. University College Cork, School of Public Health

12. * Funding sources/sponsors.

Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Include any unique identification numbers assigned to the review by the individuals or bodies listed.

European Commission, SEP-210574882, Horizon 2020

Grant number(s)

Grant agreement No. 848137

13. * Conflicts of interest.

List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.

Yes

Birgit Greiner gives talks and workshops on this topic without payment and compensation of costs. Kristian Wahlbeck is employed by a non-profit mental health Non-Governmental Organisation (NGO) which implements national mental health promotion initiatives. Birgit Aust and Reiner Rugulies work for a non-profit research institute under the Danish Ministry of Labour and conduct mental health research and give talks about the topic as part of their work. The other authors (JCS, CL, CO'C) declare that they have no known conflicts of interest.

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Professor Ella Arensman. University College Cork, School of Public Health and National Suicide Research Foundation

15. * Review question.

State the question(s) to be addressed by the review, clearly and precisely. Review questions may be specific or broad. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS where relevant.

1. Do organizational-level mental health promotion programmes impact on mental health and wellbeing in workers in the information and communication technology (ICT) sector?
2. Do organizational-level mental health promotion programmes impact on mental health and wellbeing in ICT workers specifically in small and medium-sized enterprises (SMEs)?

The ultimate aim of these review questions is to provide robust evidence that informs the development of mental health promotion tools particularly for the use in SMEs within the ICT sector.

16. * Searches.

State the sources that will be searched. Give the search dates, and any restrictions (e.g. language or publication period). Do NOT enter the full search strategy (it may be provided as a link or attachment.)

Searching will begin 04 May 2020 and include all published literature from the past 10 years (01 January 2010) and limited to the English language. Databases include Academic Search Ultimate, PsycINFO, PubMed, Scopus and Web of Science Core Collection.

We are using iterative methods to develop and apply a rigorous and comprehensive search strategy, combining a series of free text terms and MeSH terms for key concepts according to a PICO format:(a) ICT sector workers, AND (b) workplace programmes/interventions, AND (c) mental health/wellbeing.

The strategy is being developed in conjunction with subject librarian at the host institution and peer-reviewed in accordance with PRESS guidelines. Boolean operators will be used to maximise the penetration of search terms with application of "wild cards" to account for plurals, variations in databases and spelling.

The reference lists of all eligible studies and relevant review articles will be reviewed manually for additional relevant studies. Searches will be re-run immediately prior to the final analyses and any further studies identified will be considered for inclusion. Unpublished studies, including grey literature, are not eligible for inclusion.

17. URL to search strategy.

Give a link to a published pdf/word document detailing either the search strategy or an example of a search strategy for a specific database if available (including the keywords that will be used in the search strategies), or upload your search strategy.

Do NOT provide links to your search results.

Do not make this file publicly available until the review is complete

18. * Condition or domain being studied.

Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Mental health and mental wellbeing in the workplace.

We will specifically address non-clinical depression, perceived stress and burnout as indicators for mental health.

19. * Participants/population.

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

We will include all studies that were conducted with the following populations:

- Workers in the ICT sector, including industry (e.g., manufacturing of computers and telecommunication devices) and services (e.g., computer programming and consultancy activities, computer hardware repairs)
- Fully employed or sub-contracted workers
- Full-time or part-time workers

Exclusion criteria

- Mainly non-working populations (unemployed, retired, long-term sick leave)
- Populations not working in ICT
- Apprentices or workers in training
- Clinical populations with mental health disorders

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the nature of the interventions or the exposures to be reviewed.

Study must evaluate an organizational-level mental health promotion intervention aimed at improving workers' mental health and/or wellbeing or protecting workers from mental health symptoms or disorders, at the level of the organization by changing aspects of the psychosocial work environment (e.g., organizational policies, leadership style, workplace culture, working conditions) or through systematic training of work-related competencies. Interventions can involve mental health knowledge and awareness building in the organization or programs to train managers to initiate workplace changes. Multi-level interventions targeting organizational and individual changes will also be included.

We will exclude

- Individual-level interventions solely aimed at changing employees' individual coping skills or behaviour (e.g., mindfulness, stress resilience) and not embedded into the organisation.
- Health promotion not primarily targeted at mental but at physical health (e.g., cholesterol screening, nutrition or ergonomics).
- Mental health interventions not formally implemented in the workplace (e.g., signposting work-related mental health interventions freely available online without association to an organization).
- Interventions that solely target individuals with a defined mental health disorder or disease for treatment and referral.
- Interventions that solely target return-to-work after absenteeism due to mental health difficulties.
- Evaluations focussing exclusively on the economic effects of mental health interventions (e.g, ROI studies, Cost-Benefit analyses).

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

Control groups will include groups with a placebo intervention, no intervention, groups with a different mental health promotion intervention or with a different delivery mode of a workplace mental health promotion programme.

22. * Types of study to be included.

Give details of the types of study (study designs) eligible for inclusion in the review. If there are no restrictions on the types of study design eligible for inclusion, or certain study types are excluded, this should be stated. The preferred format includes details of both inclusion and exclusion criteria.

We will be pursuing a staged approach in the systematic review (Polen et al, 2008).

In stage 1, only studies with a control group will be deemed eligible for inclusion as they are likely to provide the most robust evidence, i.e., randomized control trials (RCT), cluster-randomized control trials (cRCT), controlled before- and after designs and controlled quasi-experimental studies.

After completion of stage 1, the entire team will meet to discuss whether there is sufficient evidence to answer the review questions with a view to generate evidence that informs the development of mental health promotion tools particularly for SMEs in ICT sector. If the evidence is deemed not sufficient, we will move to stage 2.

In stage 2, also uncontrolled before- and after designs and uncontrolled quasi-experimental designs will be included in the review.

Studies using solely qualitative research methods will be excluded.

23. Context.

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

A particular emphasis in the data synthesis will be placed on the effects of organization-level mental health interventions within small- and medium-sized enterprises utilizing European Commission's Small and Medium-Sized Enterprises (SME)'s definition (size criterion) of having less than 250 persons employed (https://ec.europa.eu/regional_policy/sources/conferences/state-aid/sme/smedefinitionguide_en.pdf).

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.

Primary outcomes:

Mental wellbeing, depressive symptoms, anxiety symptoms, burnout, perceived job stress.

These outcomes should be measured by validated scales rather than single items.

During our searches, we will include search terms for the primary outcomes but not for the secondary outcomes. For eligible studies found through these searches, we will also report the results for the secondary outcomes in the review.

Exclude:

Presenteeism, diagnosed mental health disorders, turnover intention, productivity, culture, mental health stigma, suicide, suicidal ideation, substance abuse.

* Measures of effect

no restrictions

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state 'None' or 'Not applicable' as appropriate to the review

Secondary outcomes:

Absenteeism from work, especially where available linked to mental health or wellbeing issues.

Psychosocial work changes, specifically work demands, control/influence, social support by peers and by supervisors/managers measured by validated scales.

* Measures of effect

no restrictions

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

One researcher will conduct and save each search on the respective databases. Study selection will be conducted using Rayyan QCRI with reviewer blinding feature. The Rayyan software will identify duplicates. One reviewer will resolve duplicates proposed by Rayyan ("Unresolved" section). The final number of duplicates will be recorded.

Screening of title and abstracts will be conducted by one reviewer, while the second reviewer will complete a blinded review of a random sample 25% of the titles. The random sample will be generated by using an electronic random number generator. An agreement of 95% of the sub-sample or higher between the two reviewers will be considered satisfactory and the remaining 75% will be screened by one reviewer only. If the agreement is below 95% all retrieved titles and abstracts will be screened by two reviewers.

Articles selected for full-text review will be exported to EndNote. Blinded fulltext review will facilitate a final decision on inclusion or exclusion be completed by two reviewers. Any discrepancy between two reviewers will be resolved through discussion with a third reviewer resolving disagreement. PRISMA flow diagrams will be informed by both EndNote and Rayyan features.

Coding

An Excel spreadsheet will be created to extract and code all relevant variables from included studies including the following: (1) Author and year; (2) type of study design; (3) number of participants and demographics, including employment type; (4) number of control participants and demographics (initial and analysed); (5) intervention details; (6) number of sessions and length; (7) type of control; (8) length of follow-up; (9) relevant outcomes; (10) instruments applied to measure outcomes; (11) country; (12) mean and standard deviation of all study groups in the relevant outcomes at all assessment times to be analysed; and (13) size of the organization(s).

27. * Risk of bias (quality) assessment.

Describe the method of assessing risk of bias or quality assessment. State which characteristics of the studies will be assessed and any formal risk of bias tools that will be used.

All studies will be assessed for risk of bias by two independent reviewers and disagreements will be discussed among the reviewers. In the event that a disagreement cannot be resolved, a third reviewer will be consulted.

The quality of each included study will be appraised using the QATQS scale (National Collaborating Centre for Methods and Tools, 2008), which assesses 6 areas: (1) selection bias, (2) design, (3) confounders, (4) blinding, (5) data collection method, and (6) withdrawals and drop-outs. Results will be scored on a scale from 1 to 3, where 1 is strong, 2 moderate and 3 weak.

In the event of missing information, the authors will be contacted to provide the missing details.

28. * Strategy for data synthesis.

Provide details of the planned synthesis including a rationale for the methods selected. This **must not be generic text** but should be **specific to your review** and describe how the proposed analysis will be applied to your data.

We will provide a narrative synthesis of the findings from the included studies, structured around the efficiency of the mental health intervention programmes to achieve the outcomes. More specifically, descriptive data and reported estimates of effect with 95% confidence intervals from included studies will be tabulated and brought together using a narrative synthesis supported by evidence tables and figures to summarise the evidence. In the case of missing data, we will contact the authors.

The narrative synthesis will be guided by the aim to identify which types of interventions are efficient or not efficient to positively promote mental health and wellbeing and to protect mental health in ICT workplaces with a view to provide the best evidence base for the development of new intervention tools for ICT sector tailored to the use in SMEs. The focus is on organization-level interventions including primary and secondary interventions. The synthesis will be guided by the integrated intervention approach for workplace mental health (La Montagne et al, 2014) and structured according to (a) interventions for the promotion of mental wellbeing and (b) interventions for the protection of mental health problems. Interventions for the promotion of mental wellbeing include those interventions that improve the positive aspects of work and workers' strengths and capacities. Interventions for the protection of mental health and wellbeing include interventions to reduce work risks in the psychosocial work environment. The third element of this model 'manage illness' represents tertiary intervention and will not be addressed in this review.

A narrative synthesis approach was selected as organization-level interventions tend to be heavily influenced by their local context which vary across organizations and regions. As a result, and given the broad range of outcome measures used in organization-level mental health intervention literature, it not expected that a meta-analysis would be meaningful.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

Several specific subgroups will be investigated, specifically the effectiveness of studies conducted in small to medium-sized enterprises as compared to studies conducted in large organizations. We will also study in detail the gender-specific aspects of mental health promotion in the ICT sector, if possible, and investigate types of employment, such as part-time, full-time worker, employed versus sub-contracted. Should data permit, we aim to describe the scope of interventions by sub-group and differentiate the effects of the interventions on the various subgroups.

30. * Type and method of review.

Select the type of review and the review method from the lists below. Select the health area(s) of interest for your review.

Type of review

Cost effectiveness	No
Diagnostic	No
Epidemiologic	No
Individual patient data (IPD) meta-analysis	No
Intervention	Yes
Meta-analysis	No
Methodology	No
Narrative synthesis	No
Network meta-analysis	No
Pre-clinical	No
Prevention	No
Prognostic	No
Prospective meta-analysis (PMA)	No
Review of reviews	No
Service delivery	No
Synthesis of qualitative studies	No
Systematic review	Yes
Other	No

Health area of the review

Alcohol/substance misuse/abuse	No
Blood and immune system	No
Cancer	No
Cardiovascular	No
Care of the elderly	No

Child health	No
Complementary therapies	No
COVID-19	No
Crime and justice	No
Dental	No
Digestive system	No
Ear, nose and throat	No
Education	No
Endocrine and metabolic disorders	No
Eye disorders	No
General interest	No
Genetics	No
Health inequalities/health equity	No
Infections and infestations	No
International development	No
Mental health and behavioural conditions	Yes
Musculoskeletal	No
Neurological	No
Nursing	No
Obstetrics and gynaecology	No
Oral health	No
Palliative care	No
Perioperative care	No
Physiotherapy	No
Pregnancy and childbirth	No
Public health (including social determinants of health)	No
Rehabilitation	No
Respiratory disorders	No
Service delivery	No

Skin disorders	No
Social care	No
Surgery	No
Tropical Medicine	No
Urological	No
Wounds, injuries and accidents	No
Violence and abuse	No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English

There is not an English language summary

32. * Country.

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved.

Denmark

Finland

Ireland

33. Other registration details.

Give the name of any organisation where the systematic review title or protocol is registered (such as with The Campbell Collaboration, or The Joanna Briggs Institute) together with any unique identification number assigned. (N.B. Registration details for Cochrane protocols will be automatically entered). If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

n/a

34. Reference and/or URL for published protocol.

Give the citation and link for the published protocol, if there is one

No I do not make this file publicly available until the review is complete

35. Dissemination plans.

Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 848137. The review will inform the development of the "Mental Health Promotion and Intervention in the Workplace" or MENTUPP Intervention tailored for employees in the construction, health care and ICT sectors, specifically in SMEs (<https://www.mentupproject.eu/>).

The project aims to improve mental health and wellbeing and reduce stigma associated with mental health while also reducing absenteeism and improving productivity in small- and medium-sized enterprises across 17 European countries as well as Australia. Specifically, the MENTUPP project aims to develop a hub of online tools comprising specific interventions for primary-, secondary- and tertiary-level workplace interventions for preventing, detecting, and treating defined mental health disorders as well as sub-clinical mental health problems, for promoting wellbeing and for combating the stigma around mental health issues. The results of the review will therefore be critical in both guiding and informing the

development of effective intervention content for MENTUPP. The review will be disseminated across the MENTUPP consortium of partners in addition to being submitted for publication in an open access peer-reviewed journal.

Do you intend to publish the review on completion?

Yes

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords will help users find the review in the Register (the words do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

Information and communication technology sector; workplace mental health; occupational mental health; organizational intervention; mental wellbeing; depression; anxiety; burnout; mental health promotion; stress prevention.

37. Details of any existing review of the same topic by the same authors.

Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

n/a

38. * Current review status.

Review status should be updated when the review is completed and when it is published. For newregistrations the review must be Ongoing.

Review_Ongoing

39. Any additional information.

Provide any other information the review team feel is relevant to the registration of the review.

Additional MENTUPP partners will contribute to the systematic review based on an application of intent with the MENTUPP consortium.

This systematic review is conducted in parallel to two other reviews by the MENTUPP team, namely one review on the effects of organization-level workplace mental health interventions on mental health and wellbeing in construction workers (PROSPERO registration 183640) and a systematic review on the effects of organization-level workplace mental health interventions on on mental health and wellbeing in healthcare workers (PROSPERO registration 183648). All reviews follow the same template, in order to provide parallel, but sector-specific evidence to inform the development of evidence-based intervention tools tailored to SME's in the three sectors.

40. Details of final report/publication(s).

This field should be left empty until details of the completed review are available.

Systematic review

1. * Review title.

Give the working title of the review, for example the one used for obtaining funding. Ideally the title should state succinctly the interventions or exposures being reviewed and the associated health or social problems. Where appropriate, the title should use the PI(E)COS structure to contain information on the Participants, Intervention (or Exposure) and Comparison groups, the Outcomes to be measured and Study designs to be included.

Systematic review of the effect of organization-level workplace mental health interventions on mental health and wellbeing in the construction industry

2. Original language title.

For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

n/a

3. * Anticipated or actual start date.

Give the date when the systematic review commenced, or is expected to commence.

04/05/2020

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

31/03/2021

5. * Stage of review at time of this submission.

Indicate the stage of progress of the review by ticking the relevant Started and Completed boxes. Additional information may be added in the free text box provided.

Please note: Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. Should evidence of incorrect status and/or completion date being supplied at the time of submission come to light, the content of the PROSPERO record will be removed leaving only the title and named contact details and a statement that inaccuracies in the stage of the review date had been identified.

This field should be updated when any amendments are made to a published record and on completion and publication of the review. If this field was pre-populated from the initial screening questions then you are not able to edit it until the record is published.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here (e.g. Funded proposal, protocol not yet finalised).

6. * Named contact.

The named contact acts as the guarantor for the accuracy of the information presented in the register record.

Birgit Greiner

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Dr Greiner

7. * Named contact email.

Give the electronic mail address of the named contact.

b.greiner@ucc.ie

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Give the full postal address for the named contact.

University College Cork\nSchool of Public Health\nWestern Gateway Building, 4th floor\nWestern Road,
Cork Ireland

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

00353214205507

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University College Cork

Organisation web address:

ucc.ie

PROSPERO

International prospective register of systematic reviews

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Grant number(s)

Grant agreement No. 848137

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Professor Ella Arensman. University College Cork, School of Public Health and National Suicide Research Foundation

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Do organizational-level mental health promotion programmes impact on mental health and wellbeing in

construction workers? Do organizational-level mental health promotion programmes impact on mental health and wellbeing in construction workers specifically in small and medium-sized enterprises (SMEs)?

16. * Searches.

State the sources that will be searched. Give the search dates, and any restrictions (e.g. language or publication period). Do NOT enter the full search strategy (it may be provided as a link or attachment.)

Searching will include all published literature from the past 10 years (01 January 2010) and limited to the English language. Databases include Academic Search Ultimate, PsycINFO, PubMed, Scopus and Web of Science Core Collection. We are using iterative methods to develop and apply a rigorous and comprehensive search strategy, combining a series of free text terms and MeSH terms for key concepts according to a PICO format: (a) construction sector workers, AND (b) workplace programmes/interventions, AND (c) mental health/wellbeing.

The strategy is being developed in conjunction with subject librarian at the host institution and peer-reviewed in accordance with PRESS guidelines. Boolean operators will be used to maximise the penetration of search terms with application of “wild cards” to account for plurals, variations in databases and spelling.

The reference lists of all eligible studies and relevant review articles will be reviewed manually for additional relevant studies. Searches will be re-run immediately prior to the final analyses and any further studies identified will be considered for inclusion. Unpublished studies, including grey literature, are not eligible for inclusion.

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Give a link to a published pdf/word document detailing either the search strategy or an example of a search strategy for a specific database if available (including the keywords that will be used in the search strategies), or upload your search strategy. Do NOT provide links to your search results.

held in confidence

Alternatively, upload your search strategy to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.

Do not make this file publicly available until the review is complete

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Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Mental health and mental wellbeing in the workplace. We will specifically address non-clinical depression, perceived stress and burnout as indicators for mental health

19. * Participants/population.

PROSPERO

International prospective register of systematic reviews

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

We will include all studies that were conducted with the following populations: • Workers and/or their managers in the construction industry, including the sectors according to the NACE

classification: construction of buildings, civil engineering and specialised construction activities

- Fully employed or sub-contracted workers
- Full-time or part-time workers

Exclusion criteria

- Mainly non-working populations (unemployed, retired, long-term sick leave)
- Populations not working in construction
- Apprentices or workers in training
- Clinical populations with mental health disorders

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We will exclude

- Individual-level interventions solely aimed at changing employees' individual coping skills or behaviour (e.g., mindfulness, stress resilience) and not embedded into the organisation.
- Health promotion not primarily targeted at mental but at physical health (e.g., cholesterol screening, nutrition or ergonomics).
- Mental health interventions not formally implemented in the workplace (e.g., signposting work-related mental health interventions freely available online without association to an organization).
- Interventions that solely target individuals with a defined mental health disorder or disease for treatment and referral.
- Interventions that solely target return-to-work after absenteeism due to mental health difficulties.
- Evaluations focussing exclusively on the economic effects of mental health interventions (e.g, ROI studies, Cost-Benefit analyses).

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Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

Control groups will include groups with a placebo intervention, without an intervention, groups with a different mental health promotion intervention or with a different delivery mode of a workplace mental health promotion programme.

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the most robust evidence, i.e., randomized control trials (RCT), cluster-randomized control trials (cRCT), controlled before- and after- designs and controlled quasi-experimental studies.

After completion of stage 1, the entire team will meet to discuss whether there is sufficient evidence to answer the review questions with a view to generate evidence that informs the development of mental health promotion tools particularly for SMEs in construction. If the evidence is deemed not sufficient, we will move to stage 2.

In stage 2, uncontrolled before- and after- designs and uncontrolled quasi-experimental designs will also be included in the review.

Studies using solely qualitative research methods will be excluded.

23. Context.

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

A particular emphasis in the data synthesis will be placed on the effects of organization-level mental health interventions within small- and medium-sized enterprises (utilizing European Commission's Small and Medium-Sized Enterprises (SME)'s definition of having less than 250 persons employed).

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.

Primary outcomes: Mental wellbeing, depressive symptoms, anxiety symptoms, burnout, perceived job stress.

These outcomes should be measured by validated scales rather than single items.

During our searches, we will include search terms for the primary outcomes but not for the secondary outcomes. For eligible studies found through these searches, we will also report the results for the secondary

outcomes in the review.

Exclude:

Presenteeism, diagnosed mental health disorders, turnover intention, productivity, culture, mental health stigma, suicide, suicidal ideation, substance abuse.

* Measures of effect

Please specify the effect measure(s) for you main outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.

No restrictions

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state 'None' or 'Not applicable' as appropriate to the review

Absenteeism from work, especially where available linked to mental health or wellbeing issues. Psychosocial work changes, specifically work demands, control/influence, social support by peers and by supervisors/managers measured by validated scales.

* Measures of effect

Please specify the effect measure(s) for you additional outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.

No restrictions

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

Study selection: One researcher will conduct and save each search on the respective databases. Study selection will be conducted using Rayyan QCRI with reviewer blinding feature. The Rayyan software will identify duplicates. One reviewer will resolve duplicates proposed by Rayyan ("Unresolved" section). The final number of duplicates will be recorded.

Screening of title and abstracts will be conducted by one reviewer, while the second reviewer will complete a blinded review of a random sample 25% of the titles. The random sample will be generated by using an electronic random number generator. An agreement of 95% of the sub-sample or higher between the two reviewers will be considered satisfactory and the remaining 75% will be screened by one reviewer only. If the agreement is below 95% all retrieved titles and abstracts will be screened by two reviewers.

Articles selected for full-text review will be exported to EndNote. Blinded fulltext review will facilitate a final decision on inclusion or exclusion be completed by two reviewers. Any discrepancy between two reviewers

will be resolved through discussion with a third reviewer resolving disagreement. PRISMA flow diagrams will be informed by both EndNote and Rayyan features.

Coding

An Excel spreadsheet will be created to extract and code all relevant variables from included studies including the following: (1) Author and year; (2) type of study design; (3) number of participants and demographics, including employment type; (4) number of control participants and demographics (initial and analysed); (5) intervention details; (6) number of sessions and length; (7) type of control; (8) length of follow-up; (9) relevant outcomes; (10) instruments applied to measure outcomes; (11) country; (12) mean and standard deviation of all study groups in the relevant outcomes at all assessment times to be analysed; and (13) size of the organization(s).

27. * Risk of bias (quality) assessment.

Describe the method of assessing risk of bias or quality assessment. State which characteristics of the studies will be assessed and any formal risk of bias tools that will be used.

All studies will be assessed for risk of bias by two independent reviewers and disagreements will be discussed among the reviewers. In the event that a disagreement cannot be resolved, a third reviewer will be consulted. The quality of each included study will be appraised using the QATQS scale (National Collaborating Centre for Methods and Tools, 2008), which assesses 6 areas: (1) selection bias, (2) design, (3) confounders, (4) blinding, (5) data collection method, and (6) withdrawals and drop-outs. Results will be scored on a scale from 1 to 3, where 1 is strong, 2 moderate and 3 weak.

In the event of missing information, the authors will be contacted to provide the missing details.

28. * Strategy for data synthesis.

Provide details of the planned synthesis including a rationale for the methods selected. This **must not be generic text** but should be **specific to your review** and describe how the proposed analysis will be applied to your data.

We will provide a narrative synthesis of the findings from the included studies, structured around the efficiency of the mental health intervention programmes. More specifically, descriptive data and reported estimates of effect with 95% confidence intervals from included studies will be tabulated and brought together using a narrative synthesis supported by evidence tables and figures to summarise the evidence relating to the interventions within the sector. In the case of missing data, we will contact the authors. The narrative synthesis will be guided by the aim to identify which types of interventions are efficient or not efficient to positively promote mental health and wellbeing and to protect mental health in construction workplaces with a view to provide the best evidence base for the development of new intervention tools for the construction sectors tailored to the use in SMEs. The focus is on organization-level interventions

including primary and secondary interventions. The synthesis will be guided by the integrated intervention approach for workplace mental health (La Montagne, 2014) and structured according to (a) interventions for the promotion of mental wellbeing and (b) interventions for the protection of mental health problems.

Interventions for the promotion of mental wellbeing include those interventions that improve the positive aspects of work and workers' strengths and capacities. Interventions for the protection of mental health and wellbeing include interventions to reduce work risks in the psychosocial work environment. The third element of this model 'manage illness' represents tertiary intervention and will not be addressed in this review.

A narrative synthesis approach was selected as organization-level interventions tend to be heavily influenced by their local context which vary across organizations and regions. As a result, and given the broad range of outcome measures used in organization-level mental health intervention literature, it not expected that a meta-analysis would be meaningful.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

Several specific subgroups will be investigated, specifically the effectiveness of studies conducted in small- to medium-sized enterprises as compared to studies conducted in large organizations. We will also study in detail the gender-specific aspects of mental health promotion in the male-dominated construction industry, if possible, and investigate types of employment, such as part-time, full-time worker, employed versus sub-contracted. Should data permit, we aim to describe the scope of interventions by subgroup and differentiate the effects of the interventions on the various subgroups.

30. * Type and method of review.

Select the type of review and the review method from the lists below. Select the health area(s) of interest for your review.

Type of review

Cost effectiveness

No

Diagnostic

No

Epidemiologic

No

Individual patient data (IPD) meta-analysis

No

Intervention

Yes

Meta-analysis

No

Methodology

No

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Narrative synthesis

Yes

Network meta-analysis

No

Pre-clinical

No

Prevention

No

Prognostic

No

Prospective meta-analysis (PMA)

No

Review of reviews

No

Service delivery

No

Synthesis of qualitative studies

No

Systematic review

Yes

Other

No

Health area of the review

Alcohol/substance misuse/abuse

No

Blood and immune system

No

Cancer

No

Cardiovascular

No

Care of the elderly

No

Child health

No

Complementary therapies

No

COVID-19

No

Crime and justice

No

Dental

No

Digestive system

No

Ear, nose and throat

No

Education

No

Endocrine and metabolic disorders

No

Eye disorders

No

General interest

No

Genetics

No

Health inequalities/health equity

No

Infections and infestations

No

International development

No

Mental health and behavioural conditions

Yes

Musculoskeletal

No

Neurological

No

Nursing

No

Obstetrics and gynaecology

No

Oral health

No

Palliative care

No

Perioperative care

No

Physiotherapy

No

Pregnancy and childbirth

No

Public health (including social determinants of health)

No

Rehabilitation

No

Respiratory disorders

No

Service delivery

No

Skin disorders

No

Social care

No

Surgery

No

Tropical Medicine

No

Urological

No

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Wounds, injuries and accidents

No

Violence and abuse

No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English

There is not an English language summary

32. * Country.

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved.

Denmark

Finland

Ireland

33. Other registration details.

Give the name of any organisation where the systematic review title or protocol is registered (such as with The Campbell Collaboration, or The Joanna Briggs Institute) together with any unique identification number assigned. (N.B. Registration details for Cochrane protocols will be automatically entered). If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

n/a

34. Reference and/or URL for published protocol.

Give the citation and link for the published protocol, if there is one

n/a

Give the link to the published protocol.

Alternatively, upload your published protocol to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.

No I do not make this file publicly available until the review is complete

Please note that the information required in the PROSPERO registration form must be completed in full even if access to a protocol is given.

35. Dissemination plans.

Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 848137 <https://www.mentupproject.eu/>. The review will inform the development of the "Mental Health Promotion and Intervention in the Workplace" or MENTUPP Intervention tailored for employees in the construction, health care and ICT sectors, specifically in SMEs. The project aims to improve mental health and wellbeing and reduce stigma associated with mental health difficulties, while also reducing absenteeism and improving productivity in small- and medium-sized

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enterprises across 17 European countries as well as Australia. Specifically, the MENTUPP project aims to develop a hub of online tools comprising specific interventions for primary-, secondary- and tertiary-level workplace interventions for preventing, detecting, and treating defined mental health disorders as well as sub-clinical mental health problems, for promoting wellbeing and for combating the stigma around mental health issues. The results of the review will therefore be critical in both guiding and informing the development of effective intervention content for MENTUPP. The review will be disseminated across the MENTUPP consortium of partners in addition to being submitted for publication in an open access peer-reviewed journal.

Yes

Do you intend to publish the review on completion?

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords will help users find the review in the Register (the words do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

Construction sector; building sector; workplace mental health; occupational mental health; organizational intervention; mental wellbeing; depression; anxiety; burnout; mental health promotion; stress prevention.

37. Details of any existing review of the same topic by the same authors.

Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

n/a

38. * Current review status.

Review status should be updated when the review is completed and when it is published. For newregistrations the review must be Ongoing.

Please provide anticipated publication date

Review_Ongoing

39. Any additional information.

Provide any other information the review team feel is relevant to the registration of the review. Additional MENTUPP partners will contribute to the systematic review based on an application of intent with the MENTUPP consortium.

40. Details of final report/publication(s).

This field should be left empty until details of the completed review are available.

Give the link to the published review.

PROSPERO acknowledgement of receipt [183648]

CRD-REGISTER <irss505@york.ac.uk>

Sat 02/05/2020 10:22

To: Greiner, Birgit <B.Greiner@ucc.ie>

[EXTERNAL] This message was sent from outside of University College Cork. Treat with caution and do not click links or open attachments unless you recognise the source of this email and trust the content is safe.

Dear Registrant,

Thank you for submitting details of your systematic review for registration in PROSPERO.

We will check the information supplied to

- make sure that your systematic review is within scope
- ensure that the fields have been completed appropriately.

PLEASE NOTE THAT THESE CHECKS DO NOT CONSTITUTE PEER REVIEW OR IMPLY APPROVAL OF YOUR SYSTEMATIC REVIEW METHODS.

We will let you know when your record has been published on PROSPERO, or alternatively ask for further information or clarification. If your application is rejected we will advise you of the reasons for non-publication (usually this will be if your review is out of scope).

With the current extremely high demand for registration, we will aim to respond within 10 working days for UK submissions but for submissions from outside the UK it will be considerably longer - possibly around three months. But we will process your application as soon as possible. During this time the record will be locked and you will not be able to access it.

Please note:

WE ARE RECEIVING MANY EMAILS ENQUIRING ABOUT PROGRESS. AS REPLYING TO THESE TAKES TIME AWAY FROM THE PROCESSING OF RECORDS, WE ASK THAT YOU ONLY EMAIL SHOULD IT BE ABSOLUTELY NECESSARY. YOU CAN BE ASSURED THAT THE TEAM ARE WORKING PARTICULARLY HARD TO PROCESS RECORDS AS QUICKLY AS IS POSSIBLE.
WE THANK YOU FOR YOUR UNDERSTANDING IN ADVANCE.

Please note that this does not stop you working on your review.

Yours sincerely,
PROSPERO Administrator

Centre for Reviews and Dissemination
University of York
York YO10 5DD
t: +44 (0) 1904 321049
e: CRD-register@york.ac.uk
www.york.ac.uk/inst/crd

PROSPERO acknowledgement of receipt [183741]

CRD-REGISTER <irss505@york.ac.uk>

Sat 02/05/2020 11:18

To: Greiner, Birgit <B.Greiner@ucc.ie>

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PROSPERO acknowledgement of receipt [183640]

CRD-REGISTER <irss505@york.ac.uk>

Fri 01/05/2020 20:11

To: Greiner, Birgit <B.Greiner@ucc.ie>

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