PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Effect of psychosocial work factors on the risk of depression: A protocol of a systematic review and meta-analysis of prospective studies
AUTHORS	Duchaine, Caroline S.; Aubé, Karine; Gilbert-Ouimet, Mahee; Bruno Pena Gralle, Ana Paula; Vezina, Michel; Ndjaboue, Ruth; Massamba, Victoria K; Trudel, Xavier; Lesage, Alain; Moore, Lynne; Laurin, Danielle; Brisson, Chantal

VERSION 1 – REVIEW

REVIEWER	Wichor Bramer Erasmus MC, Rotterdam, the Netherlands
REVIEW RETURNED	26-Aug-2019

| GENERAL COMMENTS | I have focused in my review on the methodological quality of the article, not on the contents. I recommend to see my review as additional to the standard two topic experts.

Comments in general about the text of the protocol
1. Describe which interface will be used for embase. Is that embase.com or via Ovid.
2. Describe through which interface you ll search CINAHL, probably EBSCOhost
3. Described which segment of Medline you will be searching, probably Medline ALL (if not I recommend to use that segment)
4. You describe for the search strategy tha four sets of keywords will be combined. Your set 3 combines set 1 and 2. Make clear how these terms will be combined. I assum it will be ((1 AND 2) OR 3) AND 4.
5. The numbers that you mention in the text do not correspond with the numbers used in the databases (set 3 from the text is #1 from the search strategy etc). for clarity this can better be the same.
6. Was there no librarian involved in the search? If there was I recommend mentioning their name in the acknowledgements. If there wasn't I recommend to include a librarian in you review project.

Specifically pertaining to the search strategy
1. The format of the table is rather confusing. I recommend to place the combination of keywords lines below the set of keywords lines. This is how search strategies are normally presented. If you want to add a description I recommend to add that in a separate column to the right of the columns with the search numbers and strategies.
2. I see you make overly use of major mesh terms. This will strongly reduce the sensitivity of the search strategy. I understand |

	this is probably for reducing the numbers of references, but that problem is mainly caused by a too broad set of outcomes. 3. #2 The term occupation should be truncated to also find occupational 4. #2 searches work only in the title, not in abstract. 5. #3 includes stress in the MeSH terms but not in the tw field. 6. In #3 sociological factors is exploded with the subheading psychology. I think it is wise to translate that into a proximity statement too, something along the line of: ((famil* or cultur* or poverty*) adj3 (psycholog*)) 7. #3 contains several author names. This seems to me a rather fabricated way of including several known relevant references, and does not seem very systematic. I recommend to remove the author names from the search and retrieve the relevant references by contextual search terms or by scanning reference lists. 8. All-in-all I think line #3 could be made broader than it is currently. 9. Search line #4 is too broad for this review. Your topic of interest is risk of depression. This line includes many aspects that, on their own, have nothing to do with despression. Hospitalization, absenteeism, sick-leave etc are not relevant if they are not due to depression. I would drop those general terms and focus here mainly on the depression (and additional some general psychiatric terms, such as psychiatric morbidity. This wil likely reduce the number of references.

REVIEWER	Alessandra Lugo Mario Negri Institute, Milan, Italy
REVIEW RETURNED	29-Aug-2019

GENERAL COMMENTS	This is an interesting and very well-written protocol of a systematic review and meta-analysis aiming at identifying the effect of psychosocial work factor on the risk of depression. The protocol is well-structured and exhaustively explain the study design. 1) Although some systematic reviews on the same topic have been recently published, authors justify the present study by listing some restrictions in the eligibility criteria of previously conducted studies. However, those are the "classic" criteria applied in the majority of the systematic reviews. Thus my question is: which is the added value (in terms of "cost-effectiveness") of adding, for example, papers written not only in English or published not only in peer-reviewed journals? Considering studies published up to October 2017 only in Medline, authors found almost 8500 articles. To these, you need to add those retrieved in 6 other academic databases plus 3 databases of grey literature. Probably, a sentence on the feasibility of the study would reassure those readers who believe this study is too complex. 2) How did authors plan to manage the translation of articles in non-English language? A sentence specifying this procedure could be added at page 9 ("other review eligibility criteria" paragraph). 3) "study design" paragraph: pooled analyses of cohort studies (thus providing original results) seem to satisfy the eligibility criteria. If so, authors could specify also this study design among the eligible ones. 4) How did authors plan to manage the overlap between articles providing results from the same cohort? It can happen that more

	than one article provides the results from the same study (e.g., update of the follow-up) or that a pooled-analysis includes a study also published in an original article. Authors should add a sentence to explain how they will exclude duplicate studies. 5) Specifying the ICD of depression also in the "outcomes" paragraph (page 7) could be useful. 6) "outcomes" paragraph (page 8): which is an objective assessment of antidepressant medication use? Please specify. 7) Is the search string designed only for depression or for all MHPs? From Suppl Table 2 it seems for all MHPs but I cannot understand if it is correct or not. 8) Page 6, line 1: add the reference of the protocol.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
I have focused in my review on the methodological quality of the article, not on the contents. I recommend to see my review as additional to the standard two topic experts.

Comments in general about the text of the protocol:
1. Describe which interface will be used for embase. Is that embase.com or via Ovid.
2. Describe through which interface you ll search CINAHL, probably EBSCOhost
3. Described which segment of Medline you will be searching, probably Medline ALL (if not I recommend to use that segment)

Response to #1 to #3: Thank you for your comments and suggestions. The interface used for Embase was embase.com, for CINAHL it was EBSCOhost, and for Medline we used all Ovid MEDLINE(R) 1946 to present. This information has been added in the method section of the manuscript:
"Seven electronic bibliographic databases will be consulted: Medline (all Ovid Medline(R) 1946 to present), Embase (embase.com), CINAHL (EBSCOhost), Web of Science, PsycInfo (Ovid), Sociological abstracts and IBSS."

4. You describe for the search strategy that four sets of keywords will be combined. Your set 3 combines set 1 and 2. Make clear how these terms will be combined. I assume it will be ((1 AND 2) OR 3) AND 4.
5. The numbers that you mention in the text do not correspond with the numbers used in the databases (set 3 from the text is #1 from the search strategy etc). For clarity this can better be the same.

Response to #4 and #5: Thank you for this comment. We clarified the use and the combination of these groups of keywords in the text and removed the numbers to avoid misunderstandings with the supplementary Table S2:
"Four sets of keywords will be combined to identify relevant citations. First, terms that refer to i) the population (e.g. workers); ii) the exposure (e.g. psychosocial work factors); and iii) the outcome (e.g. depression) will be combined to obtain a first group of citations. Then, terms that refer to both the population and the exposure (e.g. work stress) will be combined with the same terms that refer to the outcome used in the first step to obtain a second group of citations. Finally, the two groups will be combined with the use of the Bolean operator OR to obtain a group of unique citations."

6. Was there no librarian involved in the search? If there was I recommend mentioning their name in the acknowledgements. If there wasn't I recommend to include a librarian in you review project.
Response to #6: Yes, a librarian was involved in the search. Thank you for the recommendation, we added her name in the acknowledgements section:
"Acknowledgment
The authors thank the Canadian Institute of Health Research for financial support. They also thank Carole Brault, librarian at the CHU de Québec Research Center, for her precious help in the elaboration of the search strategy and in compiling identified citations."

Specifically pertaining to the search strategy
1. The format of the table is rather confusing. I recommend to place the combination of keywords lines below the set of keywords lines. This is how search strategies are normally presented. If you want to add a description I recommend to add that in a separate column to the right of the columns with the search numbers and strategies.

Response to #1: Thank you for your suggestion. The modifications have been made in the supplementary Table S2 to clarify the combination of keywords.

2. I see you make overly use of major mesh terms. This will strongly reduce the sensitivity of the search strategy. I understand this is probably for reducing the numbers of references, but that problem is mainly caused by a too broad set of outcomes.

Response to #2: Thank you for your comment on the search strategy. The search strategy was elaborated for a larger systematic review on the effect of psychosocial work factors on all mental health problems, as previously mentioned in our method section, and referred to another protocol published in BMJ Open that includes the same search strategy.[6] Indeed, we used a large number of keywords and mesh terms to ensure that we did not miss any relevant article for this broader review. This resulted in a less sensitive but more inclusive search strategy:
"As mentioned in a previously published protocol,[6] this review will be part of a larger systematic review on the effect of psychosocial work factors on all mental health problems. The first review retained only outcomes for certified absences from work due to a diagnosed mental health problem,[6] while the present review will focus on depression and antidepressant medication use."

3. #2 The term occupation should be truncated to also find occupational

Response to #3: Thank you for your suggestion. As mentioned in the method section and clarified in the selection process, the search strategy detailed in the supplementary material was already run on January 2017 and updated in October 2017:
"The search strategy was first run on January 2017, updated in October 2017 and will be updated 6 months prior to submission for publication."
"As this review is part of a broader systematic review, the selection of articles according to title and abstract until January 2017 has been completed for all electronic databases. The results of the updated search will be screened using the same process."
Since we will update the search 6 months prior to submission for publication, we can make changes to improve the search strategy at this moment. All improvements you propose will be included in the most recent update of the search strategy. We added this improvement step in the text of the manuscript:
"Six months prior to submission, an update will be done and the search strategy will be carefully re-examined and improved, accordingly."

4. #2 searches work only in the title, not in abstract.
Response to #4: « Please refer to answer to question 3. »

5. #3 includes stress in the MeSH terms but not in the tw field.
Response to #5: « Please refer to answer to question 3. »

6. In #3 sociological factors is exploded with the subheading psychology. I think it is wise to translate that into a proximity statement too, something along the line of: ((famil* or cultur* or poverty*) adj3 (psycholog*))
Response to #6: « Please refer to answer to question 3. »

7. #3 contains several author names. This seems to me a rather fabricated way of including several known relevant references, and does not seem very systematic. I recommend to remove the author names from the search and retrieve the relevant references by contextual search terms or by scanning reference lists.
Response to #7: « Please refer to answer to question 3. »

8. All-in-all I think line #3 could be made broader than it is currently.
Response to #8: « Please refer to answer to question 3. »

9. Search line #4 is too broad for this review. Your topic of interest is risk of depression. This line includes many aspects that, on their own, have nothing to do with despression. Hospitalization, absenteeism, sick-leave etc are not relevant if they are not due to depression. I would drop those general terms and focus here mainly on the depression (and additional some general psychiatric terms, such as psychiatric morbidity. This will likely reduce the number of references.

Response to #9: Thank you for your suggestions. As mentioned in the response to comment #2, this search strategy was elaborated for a larger systematic review on the effect of psychosocial work factors on all mental health problems. The selection of the studies specifically pertaining to this review on depression will be done during the full text screening step.

Reviewer: 2
This is an interesting and very well-written protocol of a systematic review and meta-analysis aiming at identifying the effect of psychosocial work factor on the risk of depression. The protocol is well-structured and exhaustively explain the study design.

1) Although some systematic reviews on the same topic have been recently published, authors justify the present study by listing some restrictions in the eligibility criteria of previously conducted studies. However, those are the "classic" criteria applied in the majority of the systematic reviews. Thus my question is: which is the added value (in terms of "cost-effectiveness") of adding, for example, papers written not only in English or published not only in peer-reviewed journals? Considering studies published up to October 2017 only in Medline, authors found almost 8500 articles. To these, you need to add those retrieved in 6 other academic databases plus 3 databases of grey literature. Probably, a sentence on the feasibility of the study would reassure those readers who believe this study is too complex.

Response to #1: Thank you for these relevant questions. We have clarified that the main contribution of this systematic review is to update the evidence on the effect of psychosocial work factors on the risk of depression. As mentioned in the introduction, several new prospective studies have been published since the publication of the other systematic reviews, and by the time this review will be completed; there will be more than the 16 new original studies to include as mentioned in the introduction:

5

"However, according to our preliminary results, at least 16 recent prospective studies have been published since the publication of these reviews, highlighting the need for an updated systematic review and meta-analysis on this topic."

Moreover, based on our experience, we strongly believe in the added value of including grey literature and other languages. In our first study on absences from work for a diagnosed mental health problem, we screened only 182 supplementary citations from the grey literature. In fact, we did not find additional studies on absences from work in the grey literature, but we found at least two studies on depression that could be included in the present review (with an in-depth evaluation). Furthermore, in the absences part of this broader review, we included one article in French that met our eligibility criteria that would have been missed without the inclusion of studies from other languages. We clarified this point in the method section concerning our experience in these particularities of our selection process:

"All these databases and sources of information were consulted in another systematic review from our research team, demonstrating the feasibility of this process."

Finally, as this systematic review is part of a broader review on all mental health problems and that a review concerning the risk of absence from work for a mental health problem was completed,[6] a significant amount of work has already been done. For example, the screening of articles according to title and abstract until January 2017 is finished. We clarified this information in the method section:
"As this review is part of a broader systematic review, the selection of articles according to title and abstract until January 2017 has been completed for all electronic databases. The results of the updated search will be screened using the same process."

2) How did authors plan to manage the translation of articles in non-English language? A sentence specifying this procedure could be added at page 9 ("other review eligibility criteria" paragraph).

Response to #2: Thank you for pointing out this missing information. We added the translation process in the method section:
"For articles in languages other than English or French we will use "Google translate" for a first screening according to title and abstract. During full-text screening, we will use this tool to translate the method section of the article. If the article seems to fulfill the eligibility criteria, or if doubt remains, the text will be translated by a professional translator."

3) "study design" paragraph: pooled analyses of cohort studies (thus providing original results) seem to satisfy the eligibility criteria. If so, authors could specify also this study design among the eligible ones.

Response to #3: Thank you for your suggestion. This information has been added in the study design section:
"Pooled analyses of cohort studies will only be included if the authors pooled results from studies not previously published in an original article."

4) How did authors plan to manage the overlap between articles providing results from the same cohort? It can happen that more than one article provides the results from the same study (e.g., update of the follow-up) or that a pooled-analysis includes a study also published in an original article. Authors should add a sentence to explain how they will exclude duplicate studies.

Response to #4: Thank you for pointing out this missing information. If two or more studies provide the same results for the same measurement time, only the studies with the most complete results or, if the result are similar, with the highest methodological quality will be kept. If duplicate studies provide results for the same population but for different follow-up times, only the most recent study will be included. As mentioned in the response to comment #3, pooled analyses will only be included if the

6

authors provide results from studies not previously published in an original article. As recommended, a sentence was added in the method section:

"For duplicate studies that present results from the same cohort and for the same measurement time, only the study with the most complete results or, if the results are similar, with the highest methodological quality will be included. If two or more studies provide results from the same population but with different follow-ups, only the most recent study will be included. However, if the follow-up periods do not overlap, the two studies will be included."

5) Specifying the ICD of depression also in the "outcomes" paragraph (page 7) could be useful.

Response to #5: Thank you for your suggestion, this information has been added in the Outcomes section:
"An objective measure of depression is defined as a depressive disorder (ICD-10 code F32-F34 or ICD-9 code 296.2, 296.3, 300.4 and 311) diagnosed by a health professional (e.g., physician, psychologist, and psychiatrist)."

6) "outcomes" paragraph (page 8): which is an objective assessment of antidepressant medication use? Please specify.

Response to #6: Thank you for your comment, this information was clarified in the method section:
"Antidepressant medication use assessed objectively using registers obtained from hospital, pharmacy, medical clinic, insurance or public health data (self-reported use will be excluded) will be evaluated as a secondary outcome for more severe and/or chronic depression."

7) Is the search string designed only for depression or for all MHPs? From Suppl Table 2 it seems for all MHPs but I cannot understand if it is correct or not.

Response to #7: Thank you for your comment. As mentioned in the method section, this search strategy was elaborated for a larger systematic review on the effect of psychosocial work factors on all mental health problems. Indeed, we used a lot of keywords and mesh terms for mental health to be sure not to miss any relevant article. This results in a less sensitive but more inclusive search strategy. The search strategy in the supplementary material was already run on January 2017 and updated in October 2017. Since we will make an update 6 months prior to submission for publication, we can make changes to improve the search strategy at this time:
"As mentioned in a previously published protocol,[6] this review will be part of a larger systematic review on the effect of psychosocial work factors on all mental health problems. The first review retained only outcomes for certified absences from work due to a diagnosed mental health problem,[6] while the present review will focus on depression and antidepressant medication use. Certified absence from work will only be included as an outcome in the present review if the authors specifically evaluated certified absences due to diagnosed depression (ICD-10 code F32-F34). The information sources and the electronic search strategy presented here are the same as those presented in the protocol for the review on certified work absences.[6] The eligibility criteria, study selection and data extraction applied during the full text screening refer only to the current review on depression."

8) Page 6, line 1: add the reference of the protocol.

Response to #8: We apologize for this omission, the reference has been added:
"The first review retained only outcomes for certified absences from work due to a diagnosed mental health problem,[6] while the present review will focus on depression and antidepressant medication use."
Reference 6: Duchaine CS, Gilbert-Ouimet M, Aube K, et al. Effect of psychosocial work factors on

the risk of certified absences from work for a diagnosed mental health problem: a protocol of a systematic review and meta-analysis of prospective studies. BMJ open 2018;8(10):e025948.

Reference
1. Canada MHCo. National Standard of Canada for Psychological Health and Safety in the Workplace Canada: Mental Helath Commission of Canada; 2013 [Available from:
https://www.mentalhealthcommission.ca/English/what-we-do/workplace/national-standard.
2. Mental Health Commission of Canada. Psychological health & safety. An action guide for employers Canada: Mental Health Commission of Canada,; 2012 [Available from:
https://www.mentalhealthcommission.ca/sites/default/files/Workforce_Employers_Guide_ENG_1.pdf.
3. Gilbert-Ouimet M, Brisson C, Vézina M, et al. Intervention study on psychosocial work factors and mental health and musculoskeletal outcomes. Invited essay. HealthCare Papers 2011;11(Special issue):47-66.
4. Bourbonnais R, Brisson C, Vezina M. Long-term effects of an intervention on psychosocial work factors among healthcare professionals in a hospital setting. Occup Environ Med 2011;68(7):479-486.
5. Brisson C, Cantin V, Larocque B, et al. Intervention Research on Work Organization Factors and Health: Research Design and Preliminary Results on Mental Health. Canadian Journal of Community Mental Health 2006 25(2):241-259.
6. Duchaine CS, Gilbert-Ouimet M, Aube K, et al. Effect of psychosocial work factors on the risk of certified absences from work for a diagnosed mental health problem: a protocol of a systematic review and meta-analysis of prospective studies. BMJ open 2018;8(10):e025948.

VERSION 2 – REVIEW

REVIEWER	Wichor Bramer Erasmus MC, Rotterdam, the Netherlands
REVIEW RETURNED	04-Oct-2019

GENERAL COMMENTS	I understand you will take my considerations regarding the search strategy into consideration during the final update of the search. i recommend that. just one small remark: Pag 13 line 6: Bolean should be Boolean

REVIEWER	Alessandra Lugo Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy
REVIEW RETURNED	30-Sep-2019

GENERAL COMMENTS	After the revision, I have no further comments before the acceptance of this manuscript

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1
1. I understand you will take my considerations regarding the search strategy into consideration during the final update of the search. I recommend that.
Response: Thank you to take the time to revise our manuscript. Yes your suggestions regarding the search strategy will be taken into account in the final update of the search.

2. Just one small remark:

Page 13 line 6: Bolean should be Boolean

Response: Thank you for pointed this error, the correction have been made:

"Finally, the two groups will be combined with the use of the Boolean operator OR to obtain a group of unique citations."

Reviewer: 2

After the revision, I have no further comments before the acceptance of this manuscript.

Response: Thank you to take the time to revise our manuscript.