

## 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

<b>TITLE (PROVISIONAL)</b>	Health-related preferences of older patients with multimorbidity: an evidence map.
<b>AUTHORS</b>	GONZALEZ, ANA; Schmucker, Christine; Nothacker, Julia; Motschall, Edith; Nguyen, Truc; Brueckle, Maria-Sophie; Blom, Jeanet; van den Akker, Marjan; Röttger, Kristian; Wegwarth, Odette; Hoffmann, Tammy; Straus, Sharon; Gerlach, Ferdinand; Meerpohl, Joerg; Muth, Christiane

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Ferrán Catalá-López National School of Public Health, Institute of Health Carlos III, Madrid, Spain
<b>REVIEW RETURNED</b>	02-Oct-2019

<b>GENERAL COMMENTS</b>	<p>This manuscript presents the methods and results for an evidence map on health-related preferences of older patients with multimorbidity. The manuscript of the study protocol was published in BMJ Open in September 3, 2019 (PMID: 31481558)</p> <p>Overall, this appears to be a well-developed review. The methods proposed are scientifically credible and sound. The manuscript is very well written. My comments are mainly (very minor) suggestions for details and clarification.</p> <p>Minor comments</p> <p><b>Abstract</b> Abstract. Page 6. Design: Evidence map. Line 84. I would include the word “review” here to gain sensitivity in literature searches. For example: Mapping review? or Evidence review mapping? The title contains the words “Evidence map”.</p> <p>Abstract. Page 6. Results. Line 91. The authors’ state: “We included 152 studies (79% studies from US/UK/CAN/AUS&amp;NZ) (57,093 patients).” I do not understand the “US/UK/CAN/AUS&amp;NZ” aggregation of countries. I would suggest categorization as reported in Table 2 (p.64). Perhaps authors could report total number of patients with range of patients across studies. For example: “We included 152 studies (62% North America, and 28% Europe) including 57,093 patients (range: 9–9,105).”</p> <p><b>Results</b> Results. Page 13. Line 244. Authors’ state: “Figure 1. Evidence map PRISMA flow chart”. Apparently, this figure is missing (submitted article PDF file). Please, clarify/revise.</p>
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	<p>Results. Page 13. I would include “Table 2. Descriptive summary of included studies” as new Table 1. In my opinion, “Table 1. Key characteristics of the included studies” is too long (20 pages including detailed information of 150 studies). I suggest to include Table 1 as supplementary material.</p> <p>Results. Page 14. Key characteristics of the included studies and participants. and Table 2 (p.64). According to information in Table 2, 57% (n=87) of studies refer to multimorbidity/comorbidity. Could you please describe most common/prevalent type of conditions among multimorbidities/comorbidities (e.g. mental and physical morbidities? ICD categories?).</p> <p>Discussion</p> <p>Please, if the review (re)presents amendments of a previously completed or published protocol, identify as such and list changes (e.g. documenting important protocol amendments in webappendix). Please, clarify.</p> <p>Supplementary material/Appendix. I could not find PRISMA-ScR populated checklist. Please, clarify/revise.</p>
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<b>REVIEWER</b>	Janice CHRISTIE University of Manchester UK
<b>REVIEW RETURNED</b>	04-Oct-2019

<b>GENERAL COMMENTS</b>	<p>Thank you for your well presented, comprehensive and important article which evidence maps health-related preferences for older people with multimorbidity.</p> <p>Brief explanations of the following would help clarify your methods and findings for some readers:  p12- what is a calibration exercise and what was the result of this?  p14- the type of content analysis undertaken with reference to approach (content analysis can have different meanings)  p20- strengths and weaknesses- that due to the nature of evidence-mapping no critical appraisal of the robustness of the research has been undertaken- addressing this could be a further research suggestion. Furthermore, the types of methodologies and designs employed within the mapped studies have not been presented/discussed.  Table 1a and Table 1b, consider removing 'observational' from heading as this may be confusing to readers</p> <p>I wish you every success with your paper.</p>
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### VERSION 1 – AUTHOR RESPONSE

#### Revisions (R) made according to BMJ Open reviewer’s report (Reviewer 1) by queries (Q):

**Q1** This manuscript presents the methods and results for an evidence map on health-related preferences of older patients with multimorbidity. The manuscript of the study protocol was published in BMJ Open in September 3, 2019 (PMID: 31481558). Overall, this appears to be a well-developed

review. The methods proposed are scientifically credible and sound. The manuscript is very well written.

My comments are mainly (very minor) suggestions for details and clarification.

**R1** We thank Reviewer 1 for the positive comments and the thorough reading of our manuscript.

**Q2** Abstract. Page 6. Design: Evidence map. Line 84. I would include the word “review” here to gain sensitivity in literature searches. For example: Mapping review? or Evidence review mapping? The title contains the words “Evidence map”.

**R2** We agree with the reviewer that the term “evidence map” has only recently been introduced and that this variant of a classical systematic review is still less standardized in methods (1). We would highly appreciate to keep the introduced term for this design but explain it for readers who are not familiar with it. We have modified the abstract accordingly:

- Abstract – Design (now line 83): “Evidence map (systematic review variant)”

**Q3** Abstract. Page 6. Results. Line 91. The authors’ state: “We included 152 studies (79% studies from US/UK/CAN/AUS&NZ) (57,093 patients).” I do not understand the “US/UK/CAN/AUS&NZ” aggregation of countries. I would suggest categorization as reported in Table 2 (p.64). Perhaps authors could report total number of patients with range of patients across studies. For example: “We included 152 studies (62% North America, and 28% Europe) including 57,093 patients (range: 9–9,105).”

**R3** We have applied the suggested change:

- Abstract – Results (now lines 90-91): “~~We~~ **The** included 152 studies (~~79%~~ **62%** studies from ~~US/UK/CAN/AUS&NZ~~ **North America**, **28%** from **Europe**) **comprised** (57,093 patients) **overall (range 9-9,105).**”

**Q4** Results. Page 13. Line 244. Authors’ state: “Figure 1. Evidence map PRISMA flow chart”. Apparently, this figure is missing (submitted article PDF file). Please, clarify/revise.

**R4** We would like to apologize for the missing figure. Most likely, we selected the wrong file category when we uploaded the manuscript and did not realize that it was not included in the PDF file. We will make sure both files are included when resubmitting.

**Q5** Results. Page 13. I would include “Table 2. Descriptive summary of included studies” as new Table 1. In my opinion, “Table 1. Key characteristics of the included studies” is too long (20 pages including detailed information of 150 studies). I suggest to include Table 1 as supplementary material.

**R5** We thank Reviewer 1 for this very reasonable suggestion, and we proceed accordingly. The files included in the manuscript were renamed and we modified the text as follows:

- Results (now lines 279-289): “Tables S3a-S3f shows key characteristics of included studies. Supplementary Table S4 presents excluded studies and reasons for exclusion.
- Results (now line 310): “Content analysis (27) enabled us to identify seven major types of preference (Table 2).”
- Results (now line 337): “...in the final months of their lives, was the main theme (Table 2).”

**Q6** Results. Page 14. Key characteristics of the included studies and participants. and Table 2 (p.64). According to information in Table 2, 57% (n=87) of studies refer to multimorbidity/comorbidity. Could you please describe most common/prevalent type of conditions among multimorbidities/comorbidities (e.g. mental and physical morbidities? ICD categories?).

**R6** We have provided additional information about conditions, as far as the available data allowed us to extract this information possible (Table 2 refers to Table 1 now). In studies about patients with multimorbidity, the authors often did not provide further details about included conditions. Therefore, an aggregation about most prevalent conditions in multimorbidity studies was not possible.

**Table 1. Descriptive summary of included studies.**

Studies describing patients with multimorbidity*	58 (38 %)
Studies describing patients with an index disease plus comorbidity**	29 (19 %)
Diabetes	7 (5 %)
Hypertension	5 (3 %)
Depression / Mental illness	4 (3 %)
Cardiovascular disease	4 (3 %)
Osteoarthritis	3 (2 %)
Other	6 (4 %)
Studies describing patients with chronic diseases prone to multimorbidity	65 (43 %)
Chronic heart failure	....
...	

\*No further details of included conditions were reported in the majority of studies

**Q7** Discussion. Please, if the review (re)presents amendments of a previously completed or published protocol, identify as such and list changes (e.g. documenting important protocol amendments in webappendix). Please, clarify.

**R7** We thank Reviewer 1 for this suggestion. We have provided this information within the main text as follows:

- Methods (now lines 168-169): "...that has since been subject to no amendments,...".

**Q8** Supplementary material/Appendix. I could not find PRISMA-ScR populated checklist. Please, clarify/revise.

**R8** We would like to apologize for the missing table. Most likely, we selected the wrong file category when we uploaded the manuscript and did not realize that it was not included in the PDF file. We will make sure both files are included when resubmitting.

#### **Revisions (R) made according to BMJ Open reviewer's report (Reviewer 2) by queries (Q):**

**Q9** Thank you for your well presented, comprehensive and important article which evidence maps health-related preferences for older people with multimorbidity. Brief explanations of the following would help clarify your methods and findings for some readers:

**R9** We would like to thank Reviewer 2 for the encouraging comments and the most helpful suggestions for clarifications.

**Q10** p12- what is a calibration exercise and what was the result of this?

**R10** We agree with Reviewer 2 that the calibration exercise was not sufficiently explained in the originally submitted manuscript. In the revised version, we provided a description and added the reference to the study protocol for further details (where it is explained in detail). In addition, we added to the results that no modifications to the predefined inclusion and exclusion criteria were necessary considering the results of the calibration exercise:

- Methods (now lines 219-223): "Two reviewers (AIG, JN) screened the titles and abstracts of all references identified by electronic searches ~~following a calibration exercise~~. Before screening, stepwise calibration was performed on a sample of 50 studies, with the aim of achieving 80 % agreement between the two reviewers (20). If 80 % agreement had not been reached, our

inclusion and exclusion criteria would have been refined to reach this cut-off. The new criteria they have required further calibration using a new sample of 50 studies until the threshold is reached. We also...”

- Results (now lines 276-277): “As 80 % agreement between the two reviewers was achieved in the first calibration exercise, inclusion and exclusion criteria remained unchanged.”

**Q11** p14- the type of content analysis undertaken with reference to approach (content analysis can have different meanings)

**R11** We have clarified the type of content analysis undertaken in the method section and also provided the reference (already cited in the methods) in the results section.

- Methods (now line 235): “We conducted a qualitative relational content synthesis analysis (27).”
- Results (now line 310): “Content analysis (27) enabled us to identify seven major types of preference (Table 2).”

**Q12** p20- strengths and weaknesses- that due to the nature of evidence-mapping no critical appraisal of the robustness of the research has been undertaken- addressing this could be a further research suggestion.

**R12** We appreciate this suggestion. To further balance our discussion, we discussed this design-related weakness (section evidence clusters)

- Discussion (lines 422-424): “Overall, we identified clusters of evidence. However, as evidence maps do not usually allow the critical appraisal of the robustness of evidence, the evidence clusters (i.e. studies) still require verification (19).”

**Q13** Furthermore, the types of methodologies and designs employed within the mapped studies have not been presented/discussed.

**R3** We have rephrased our manuscript across the main text to clarify the types of methodology and designs of the identified studies and improved the cross-referencing to Table 1 and Supplementary tables 3a-3f.

- Results (now lines 295-297): “Of the included studies, all but one ~~nearly all~~ were were observational (151/152), and nearly all were conducted in developed countries

(147/152) (Table 1, Tables S3a-S3f) and published in 2007 or thereafter (128/152) (see Supplementary-Figure S1). , and All studies were written in English.

- Discussion and conclusion (now lines 406-407): “The vast majority of studies included in the evidence map used a qualitative or cross-sectional quantitative design (126/152)”.

**Q14** Table 1a and Table 1b, consider removing 'observational' from heading as this may be confusing to readers.

**R14** Following the suggestion we removed “observational” from the heading of the corresponding Tables (in the revised version Table 1a and Table 1b refer to Table S3a and Table S3b).

**Q15** I wish you every success with your paper.

**R15** We truly appreciate your wish.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Dr. Ferrán Catalá-López National School of Public Health, Institute of Health Carlos III, Madrid, Spain
<b>REVIEW RETURNED</b>	01-Nov-2019

<b>GENERAL COMMENTS</b>	Thank you for inviting me to review this revised version of the manuscript. Overall, the authors have addressed the reviewers' comments very well. I do not have further suggestions/comments. Congratulations to the authors of this interesting work.
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<b>REVIEWER</b>	Janice Christie The University of Manchester, UK
<b>REVIEW RETURNED</b>	26-Oct-2019

<b>GENERAL COMMENTS</b>	Thank you for your time and effort on this paper.
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