

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)	What factors are associated with ambulance use for non-emergency problems in children? A systematic mapping review and qualitative synthesis
AUTHORS	Proctor, Alysha; Baxter, Helen; Booker, Matthew

VERSION 1 – REVIEW

REVIEWER	Gregory Whitley University of Lincoln, Community and Health Research Unit
REVIEW RETURNED	14-Jun-2021

GENERAL COMMENTS	<p>Thank for the opportunity to read your study, titled “What factors are associated with ambulance use for nonemergency problems in children? A systematic mapping review and qualitative synthesis”. This review aimed to explore factors associated with ambulance use for non-emergency problems in children. This is an important topic considering the rise in ambulance call volume over the last 10 to 15 years. I only have one major concern, followed by several minor comments.</p> <p>Major concern re. thematic synthesis and multiple study types. In your PROSPERO submission you stated “Only studies using qualitative data collection and analysis methods (either wholly or partially as part of a mixed-methods approach) will be included in the thematic synthesis stage of the review (Phase B)”. However, in your manuscript you have stated that, due to limited studies, you have included any study type into the thematic synthesis. I’m not an expert on thematic synthesis, but as far as I understand, only qualitative data can be included. Therefore a few things are unclear: 1) It’s unclear how the quantitative studies have been included in the thematic synthesis. I understand that the boundary between quantitative and qualitative studies can be blurred, as explained by the Thomas and Harden paper, but I’m interested to know how you incorporated quantitative studies into a thematic synthesis? Maybe consider developing a table for a supplementary file to show the audit trail from primary study quotations used to the descriptive themes to the analytical themes.</p> <p>2) Would narrative synthesis or a mixed synthesis approach be more appropriate? Can you explain why thematic synthesis was still the most appropriate synthesis approach for this review?</p> <p>Please see below minor comments on your manuscript:</p> <p>ABSTRACT. Key information is missing, such as databases searched, time frame, inclusion criteria. Consider adding more headings in the abstract, such as “design”, “data sources”, “eligibility criteria”, “critical appraisal and synthesis”.</p>
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INTRODUCTION.

Considering the heavy reliance on the term “non-emergency problems” within the manuscript, it might be useful to try and describe what you mean by this a little more in the introduction. Maybe add some statistics to give context.

METHODS.

Search strategy.

A worked search would be useful to see, you have ticked the PRISMA checklist for item 8, but neither page 4 nor 7 show the full worked search for a database. Please show a full worked search for a database.

Remember “MeSH” headings is the term used for MEDLINE/PubMed. The broader term is “subject headings” which would be more suitable, as you’ve used other databases. I’m assuming you used MeSH headings for MEDLINE and suitable subject headings for the other databases, where appropriate.

Inclusion/exclusion.

Interesting that you’ve used the WHO definition of a child: 19 years and below. I might have used Unicef’s definition of <18 years. This isn’t a major problem, just an interesting observation.

Synthesis.

See major concern above re. thematic synthesis and multiple types of study.

Critical Appraisal.

What CASP checklist was used? It’s not clear. It seems like the qualitative checklist was used? Considering you have used multiple study types, is this appropriate? Would it be better to use checklists relevant to each study type? Or MMAT (Mixed Methods Appraisal Tool).

You stated that the CASP checklist was modified. Can you include the modified checklist so we can see what changes you have made to it?

RESULTS.

You don’t need to duplicate study numbers in text “which left 67 (n=67)”.

Can you justify the inclusion of two literature reviews? Why not just use their primary studies?

Can you include the results of the critical appraisal? (PRISMA checklist point 19).

Table 1 point 5. Parental Education. This doesn’t make sense by itself, do you mean lower/limited parental education?

Table 2. “perceived emergency” and “unsure what constitutes as an emergency” seem very close in nature (Table 1 point 7 and 8). Can you justify having both in the tables and not amalgamating them?

Pg 10 line 15 do you mean “rounds of inductive grouping of codes?”

Table 3 and 5. Seem fine. Consider amalgamating them, to show which descriptive themes led to which analytical themes?

It’s not clear how Table 4 was generated. Descriptive and analytical themes are a product of thematic synthesis. How was Table 4 created?

The discussion and conclusion seem fine. This was an enjoyable paper to read, thank you. I look forward to seeing this published.

	Good work.
REVIEWER	Ali Güngör SBU Ankara Dr Sami Ulus Maternity Child Health and Diseases Training and Research Hospital, Department of Pediatric Emergency Medicine
REVIEW RETURNED	17-Jun-2021
GENERAL COMMENTS	<p>Factors are associated with ambulance use for non-emergency problems in children.</p> <p>A well-designed, well-written study. I think it will contribute to the literature.</p> <p>Article Type: It appears as original research, should be corrected as a review.</p> <p>References should be corrected according to journal writing rules. For example, in some references, the page number is pp. 712-717; in some, it is given as 11-5.</p>

VERSION 1 – AUTHOR RESPONSE

<p>1. Reviewer 1 comment: Explain how quantitative studies have been included in the thematic analysis. Explain why thematic synthesis was still the most appropriate approach for this review.</p>	<p>We thank the reviewer for raising this interesting question, and accept that there is an often nuanced decision between undertaking a mixed-synthesis and undertaking a qualitative synthesis of mixed-methods data, with specific considerations to each. Given that the reviewer has raised this question, we fully acknowledge that other readers may well have a similar question about why we have chosen this approach, and therefore have added some additional information to the methods section to explain our rationale (see page 6).</p> <p>Our rationale is summarised here: There is a growing methodological discourse around using the contents of primary studies of qualitative, quantitative and mixed-method designs (and even reviews) as data for qualitative evidence synthesis. This often focuses, as we have here, around the centring stance of “Phenomenon of Interest and Context” (the so-termed P-C model, Joanna Briggs Institute). There are a range of methodological approaches to handling and analysing data extracted according to the P-C models as part of a qualitative synthesis, including metatheoretical and metaethnographic approaches that draw on grounded theory and line-of-argument principles to synthesise ‘key concepts’, and critical interpretive methods resulting in synthetic constructs (e.g. Dixon-Woods <i>et al</i>). Whilst these approaches are – we acknowledge – more frequently applied to purely qualitative datasets, we draw on the developing approach of an ‘integrated design’ to a review of mixed-method primary data (as opposed to the contrasting approaches of a sequential or cyclical design as described in the literature e.g. [Sandelowski <i>et al</i>, Heyvaert <i>et al</i>]) whereby the methodological differences in qualitative and quantitative data</p>
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	are minimised, allowing them to be treated as producing findings that can be readily synthesised because they assess the same fundamental research question or purpose. By extracting and codifying the results and discussions sections of all our included data, we treat the data at this level as 'equivalent in purpose' under this premise. Furthermore – and in keeping with concept of a 'data-based convergent synthesis approach' (Hong <i>et al</i>) only one synthesis takes place with all included study designs – in our analysis, this is thematic.
2. Reviewer 1 comment: Key information is missing from the abstract (databases searched, time frame, and inclusion criteria) - consider adding more headings such as 'design'.	Key information added included databases searched, time frame and inclusion criteria under the heading 'design', on page 2.
3. Reviewer 1 comment: Describe what is meant by 'non-emergency' problems within the introduction.	We have included a sentence describing what we mean by 'non-emergency' for the purposes of this review within the introduction.
4. Reviewer 1 comment: Please show a full worked search for a database.	This is included as a supplementary file as per point 3.
5. Reviewer 1 comment: Clarity on the modified CASP checklist used. Include the modified checklist as a supplementary file.	We used a version of the CASP toolkit, modified and optimised specifically for quality appraisal as part of a qualitative evidence synthesis (Long, French & Brooks). We include a reference to the version used in the paper and some additional detail in our methods section.
6. Reviewer 1 comment: You do not need to duplicate study numbers in the text (67 (n=67)).	Removed duplications of numbers on page 7.
7. Reviewer 1 comment: Can you justify the inclusion of two literature reviews?	Both literature reviews had interesting and relevant points regarding the research question. Only one was used in phase B (Becker <i>et al</i>) as the literature review by Sinclair did not include any detail on what constitutes an 'inappropriate call'. There were no restrictions on the types of study included in the systematic review in order to gather all available relevant evidence.
8. Reviewer 1 comment: Table 1 point 5 parental education- this doesn't make sense by itself, do you mean lower/limited parental education?	Yes- this relates to the level of parental education (whether that be high or low). We have clarified this within table 1.
9. Reviewer 1 comment:	We have removed 'unsure what constitutes an emergency' and

Table 2 'perceived emergency' and 'unsure what constitutes an emergency' seem very close in nature- can these be amalgamated?	kept 'perceived emergency' within the table.
10. Reviewer 1 comment: Page 10 line 15, do you mean 'rounds of inducting grouping codes'?	Yes- thank you. This has been changed on page 10.
11. Reviewer 1 comment: It is not clear how table 4 was generated. Descriptive and analytical themes are a product of thematic synthesis – how was table 4 created?	Thank you for highlighting where a little more detail would be informative. We re-explored our themes in a manner informed by line-of-argument approaches to look at the axis of the themes. We have included some additional wording on page 10 to describe how table 4 was generated.
12. Reviewer 2 comment: References should be corrected regarding page numbers.	We have corrected inconsistencies in the way page numbers were included in our reference list.

VERSION 2 – REVIEW

REVIEWER	Gregory Whitley University of Lincoln, Community and Health Research Unit
REVIEW RETURNED	13-Aug-2021

GENERAL COMMENTS	<p>I would like to thank the authors for clearly and competently addressing my comments and feedback from the initial peer-review. You have adequately satisfied my one major concern and the majority of the minor concerns have been addressed. In my opinion, the manuscript is much improved. Well done.</p> <p>There is one minor comment that still stands regarding the abstract, and it may be my fault for not making it clearer in the initial review. I initially stated "Consider adding more headings in the abstract, such as "design", "data sources", "eligibility criteria", "critical appraisal and synthesis"." In your reply, you only mentioned "design" and have subsequently changed "methods" for "design". This was not my intention and it now reads incorrectly. It was rather an all or nothing approach, either replace "methods" with all of those headings and fill the text appropriately, or keep as simply "methods". Happy for you to decide which one you prefer.</p> <p>In addition to this, I would also like to suggest one other comment on the abstract that was not apparent to me on first review:</p> <p>1. Could you add the number of papers included in the review at the start of the "results" section.</p> <p>Thank you.</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer comments	Response/changes made
<p>There is one minor comment that still stands regarding the abstract, and it may be my fault for not making it clearer in the initial review. I initially stated "Consider adding more headings in the abstract, such as "design", "data sources", "eligibility criteria", "critical appraisal and synthesis"." In your reply, you only mentioned "design" and have subsequently changed "methods" for "design". This was not my intention and it now reads incorrectly. It was rather an all or nothing approach, either replace "methods" with all of those headings and fill the text appropriately, or keep as simply "methods". Happy for you to decide which one you prefer.</p>	<p>Changed to 'methods'</p>
<p>Could you add the number of papers included in the review at the start of the "results" section within the abstract.</p>	<p>Number of papers included in the review now written at the beginning of the results section in the abstract.</p>