Author’s response to reviews

Title: Barriers and facilitators to screening and treating malnutrition in older adults living in the community: A mixed-methods synthesis

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Author’s response to reviews:

Tovah Honor Aronin
Liz Payne
Editor, BMC Family Practice
Centre for Clinical and Community
Dear Professor Aronin,

“Barriers and facilitators to screening and treating malnutrition in older adults living in the community: A mixed-methods synthesis”.

Thank you for the opportunity to resubmit the manuscript with suggested revisions. We would also like to thank yourself and the other reviewers for the time and expertise they dedicated to the paper. The supportive feedback and suggested revisions have helped to shape and improve the manuscript. Please find below our detailed responses to all comments. In addition, a version of the paper containing tracked changes has been uploaded for reference.

Additions to the manuscript have been made where suggested. However, we have tried to incorporate changes as concisely as possible.

We hope that the revised manuscript is now suitable for publication, and look forward to hearing from you shortly.

Yours sincerely,

Dr Liz Payne, (corresponding author, on behalf of all co-authors)

Research Fellow in Health Psychology
1. Under the heading "Funding", please declare the role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript.

RESPONSE: We have clarified the role of the funding body in the study:

This synthesis is part of the STREAM project, which aims to develop and test a complex intervention targeting both healthcare professionals and older patients in primary care. It is funded from an NIHR Programme Grant for Applied Research, Reference Number RP-PG-0614-20004. The funding body approved the project team’s study design, but was not involved in data collection, analysis or write-up. (Line 462-3)

2. Trial registration: Provide the date and registry details and clarify if retrospective and Prospectively registered.

RESPONSE: We have deleted the trial registration details, as the paper does not cover the STREAM trial, and clarified that the review protocol was retrospectively registered as it was registered after analysis had begun, but before it was completed:

Review registration. PROSPERO: CRD42017071398. The review protocol was registered retrospectively. (Line 86-7)

DELETED: Trial registration. ISRCTN76863664 https://doi.org/10.1186/ISRCTN76863664 (Line 88)

3. Please move the 'Additional files' after the 'References'.

RESPONSE: We have moved the ‘additional files’ to after the references.
1. Be more consequent with using the same terms/words for similar topics (like aim, setting) throughout (Reviewer 1)

RESPONSE: We agree that more consistent use of terms would improve the clarity of the arguments and readability of the manuscript. We have amended wording to make terms more consistent throughout, where the meaning was not changed by doing so (e.g. screen and treat; barriers and facilitators), for example:

The aims of this synthesis are to: 1) identify barriers and facilitators to implementing malnutrition screen and treat policies in primary/community care; 2) map barriers and facilitators to features in existing interventions; and 3) make recommendations for the design of interventions targeting malnutrition in older adults and nutrition education for HCPs (Line 146-150)

Abstract:

2. You can delete "in a novel approach …" (Reviewer 1)

RESPONSE: We agree that the approach of mapping barriers and facilitators to components outlined in intervention studies may not be novel, rather that this approach appears not to have been used before in this field. To avoid ambiguity, we have removed the reference to a ‘novel approach’:

Barriers and facilitators were extracted and mapped onto intervention features to determine whether these had addressed barriers, DELETED: in a novel approach to synthesising literature in this field. (Line 71-72)

3. Include a clear aim in the abstract. (Reviewer 1)

Also: Provide a purpose statement (Reviewer 3).

RESPONSE: We agree that this is helpful so we have added an ‘aim’ which reflects the aim in the methods section:

Aim. To identify barriers and facilitators to implementing malnutrition screen and treat policies in primary/community care, which barriers have been addressed and which facilitators have been successfully incorporated in existing interventions. (Line 62-64)
4. In the results (abstract) I would focus on the research question/aim. For example the sentence on effectiveness of the interventions can be omitted as this was not the main research question (Reviewer 1).

RESPONSE: We welcome this comment and agree that it is important to focus on the research question/aim, and that we did not aim to assess the effectiveness of interventions. We have amended the wording to reflect this:

DELETED: The effectiveness of the interventions was mixed. ADDED: Facilitators addressing a wide range of barriers were identified, yet few interventions addressed psychosocial barriers to screen-and-treat policies for patients, such as loneliness and reluctance to be screened, or healthcare professionals’ reservations about prescribing oral nutritional supplements. (Line 75-79)

5. In the conclusion, relate clearly to the research question/aim. The last sentence (abstract) seems a conclusion but the first two sentences may not be the essence of the results (Reviewer 1).

RESPONSE: Thanks to the reviewer for raising this so that we could check our statements. The first two sentences are relevant conclusions as they sum up the findings of the review. We have re-phrased the ‘conclusion’ to clarify that the conclusion reflects the findings of the synthesis:

The studies reviewed identified several barriers and facilitators and addressed some of these in intervention design, although a prominent gap appeared to be psychosocial barriers. No single included study addressed all barriers or made use of all facilitators, although this appears to be possible. (Line 80-83)

Background:

6. Line 118: "barriers to nutritional improvement". This is an example of inconsistent use of terms. I would repeat the exact aim (perhaps shortened a bit) using the same terminology to keep the structure and focus in the text (Reviewer 1).

Also: Lines 128-132. Why no use the term screen-and treat like in line 134? Here you suddenly use "screening and encouraging adequate nutrition" (Reviewer 1).

RESPONSE: See item 1: we agree that consistent use of terminology is beneficial so we have addressed all the reviewers’ specified examples, plus others that we have identified in the text, to ensure terminology is consistent throughout.
7. Introduction: Differentiate undernutrition/malnutrition risk and undernutrition / malnutrition (see Cederholm et al., 2016) (Reviewer 3).

RESPONSE: Thank you for this suggestion. We have differentiated malnutrition / undernutrition and risk of malnutrition / diagnosis of malnutrition, referring to Cederholm 2017 and Rojer 2016:

There is a lack of consensus about the definition of malnutrition, though it is widely accepted that there is a trajectory from ongoing undernutrition, which is synonymous with ‘risk of malnutrition’, to malnutrition, though there is currently no agreed cut-off for diagnosis of malnutrition(Rojer 2016; Cederholm 2017). (Line 105-108)

8. What is the prevalence of risk vs. diagnosed malnutrition? (Reviewer 3)

RESPONSE: We have referred to a paper co-authored by the reviewer, which outlines the limitations of malnutrition diagnosis:

Among community-dwelling older adults in the UK and Ireland, 14% DELETED: are estimated to be malnourished ADDED: may be at risk of malnutrition6, though estimates vary depending on the specific sub-groups and screening tools studied(Laur 2017). (Line 103-105)

9. Clarify that MUST identifies risk but does not diagnose malnutrition (Reviewer 3).

RESPONSE: We have clarified that MUST identifies risk of malnutrition, but does not diagnose malnutrition:

Systematic screening, using validated tools such as the Malnutrition Universal Screening Tool10, improves identification of DELETED: malnourished individuals ADDED: who may be at risk of malnutrition4 allowing treatment which may prevent malnutrition and its consequences11. (116-119)

10. Some discussion on care pathways and if treatment is recommended after screening vs. diagnosis is warranted. One of the barriers to treatment may be resistance on the part of the older client to attend a dietitian consultation for diagnosis, as this is another office visit (Reviewer 3).

RESPONSE: Added further information on care pathways that include identification of risk of malnutrition followed by additional assessments before diagnosis:

Treatment includes providing dietary advice12, meals13 or oral nutritional supplements (ONS14). Treatment may differ depending on the severity of malnutrition risk, and several care pathways, including for the community15, have been developed. Care pathways include tools to
aid diagnosis of underlying diseases or conditions that make eating or digestion difficult, so that these can be treated (Cederholm 2017). (Line 120-124)

Methods:

11. I would elaborate more on inclusion and exclusion criteria in the text (Reviewer 1).

RESPONSE: we have included additional detail about inclusion / exclusion criteria, as suggested:

Qualitative and quantitative intervention studies and studies exploring older people’s eating patterns or appetite or health professionals’ experiences in relation to undernutrition were included if participants were either adults 65+ living at home or healthcare professionals who would care for these participants. (Line 167-170)

12. In Methods section, too much parentheses were used for explaining in detail or citing tables and figures (e.g., line 139, 144, 153, 157, 172). Using parentheses only essential part is preferable (Reviewer 2).

Also: In Results section, too much parentheses were used for tables (e.g., line 198, 203, 205, 210). Please correct (Reviewer 2).

RESPONSE: We have removed parentheses throughout the manuscript where this was possible without losing the sense of the detail, for example:

Key study characteristics were extracted and tabulated (Supplementary Tables 4-5). Figure 1 is a flow chart outlining eligible studies containing deleted: (Figure 1) presented qualitative and quantitative data; those presenting primarily quantitative data will be referred to as “interventions” and included RCTs (n = 6), RCT feasibility (n = 3) and pre-post designs (n = 4). (Line 177-181)

13. Thank you for identifying by initials those who did various aspects of the review. However, this was focused on a few of the several authors listed. How were other authors involved? (Reviewer 3).

RESPONSE: We have already stated that during analysis “the findings and additional codes were discussed with all authors” – Line 190. We have added a sentence to further clarify the roles of all authors:
All authors read and commented on the draft synthesis and provided clinical and/or nutritional expertise during search strategy development and analysis of findings. (Line 201)

14. Methods: Reliability testing was done both for the thematic coding and the quality rating. However, results of this reliability assessment are not presented the thematic coding. Was the quality rating for articles done by both reviewers for all articles? (Reviewer 3).

RESPONSE: We have clarified our process of inter-rater quality assessment of included studies: LP and PH first trialled the MMAT on a small selection of papers. Overall, agreement was acceptable (76%), but some criteria were identified as ambiguous (criteria 1.3, 1.4, 2.3, 3.4 and 4.4). The raters agreed on a mutual understanding of these before each independently assessing all remaining studies. (Line 207-210)

Results:

15. The results section should only report results and not discuss or interpret (even if the topic is about interpretation). For example lines 240-247 contain interpreting sentences that belong in a discussion section (Reviewer 1).

Also: Is line 265-266 a result (so reported in studies) or an interpretation/own observation for the discussion? (Reviewer 1).

RESPONSE: We have clarified where interpretation came from the included studies (i.e. was part of the findings), and moved examples of our own interpretation to the discussion section:

Giving patients ONS is one treatment approach in the reviewed studies. Indeed, although some interventions incorporating ONS showed some beneficial effects33,41, others were ineffective34,37,45 (see Supplementary Table 4). No interventions recorded (by measuring compliance) whether patients were effectively persuaded to consume ONS. Of note, in the intervention where ONS improved weight and physical function41, participants received clear instructions on how to take ONS, which no others reported. DELETED: may be uncomfortable to consume, which no intervention in this synthesis considered, but which could be addressed through practical advice (e.g. drinking through a straw). (Line 291-299)

16. Line 252 provide citation for this statement (Reviewer 3).

RESPONSE: We have provided a citation for this statement:
Qualitative studies showed older adults may struggle with cooking and eating alone. (Line 277-278)

17. The result section is rather long (Reviewer 1).

RESPONSE: We appreciate the results section is long and have reduced the word count as far as possible while addressing reviewers’ comments. However, we feel that the remaining word count is needed in order to adequately synthesise qualitative and quantitative data from the included studies and convey the key findings. We have referred the reader to the summary tables wherever possible.

18. Results: Line 205 unclear why this line starts with 'not mentioned before' (Reviewer 3).

RESPONSE: Thank you – we agree that this needs clarification, so have added the specific professionals described in the studies:

In three of these, this was complemented with support from physicians, nurses, physiotherapists or occupational therapists, not mentioned before in a multi-disciplinary approach. (Line 228-230)

19. Referencing of the noted barriers and intervention components from the articles is inconsistent. For example Lines 265-70 reference the citations from which this barrier was drawn. Review other sections to ensure these details are cited (Reviewer 3).

RESPONSE: Thank you for raising this. We have checked that the referencing reflects the barriers and intervention components outlined in the text and made corrections where necessary.

20. Although noted in the tables and in the methods, it is not clear if results for only the high quality articles are presented in the text (Reviewer 3).

RESPONSE: We intended to include all studies, regardless of quality, and to highlight this in the tables. We do not identify which studies were deemed high and low quality within the text, so as to maintain clarity:

…..however no low quality studies are excluded from the results presented below. Results drawn from interventions deemed to be of higher or lower quality are summarised separately in Supplementary Tables 1-3, to show which results are likely to be more reliable. Notable differences in quality are emphasised in text. (Line 219-223)
Discussion:

21. Line 288: why is reference 26 included? A summary of own results does normally not include a citation of another paper. Please again refer to the same aim (Reviewer 1).

RESPONSE: Reference 26 outlined the review method that we used. We agree that we do not need to refer to it in the discussion so have deleted the extraneous reference:

This synthesis identified, from recent literature, barriers and facilitators to screening and treating malnutrition in community-dwelling older adults in primary care, and demonstrated whether and how interventions have incorporated these.

22. Line 313: effective on … [which outcome measure(s)?] (Reviewer 1).

RESPONSE: Thank you for pointing out this oversight. We have added relevant outcomes in relation to the effectiveness of interventions:

Previous research shows ONS to be effective in hospital patients in terms of weight gain, reduced complications and mortality.

23. There was a relevant paper of an RCT published by van der Pols-Vijlbrief et al (Clin Nutr. 2017 Dec;36(6):1498-1508) in 2017. Although beyond the inclusion date, perhaps you can use this paper (results and process evaluation described in the discussion) in the discussion section. (Reviewer 1)


RESPONSE: Thank you for suggesting these very useful papers. We have now referred to van der Pols-Vijlbrief et al 2016 and Reimer et al 2012:

Van der Pols-Vijlbrief and colleagues (2016) also suggest that easy-to-execute actions such as tips promoting 3 or more snacks a day and increased physical activity may be adopted more readily.

Also:
A recent randomised controlled intervention study identified additional beliefs that interfered with patients’ adoption of self-care components, including not believing that the recommended action would solve the problem (Van der Pols-Vijlbrief 2016). (Line 342-345)

Also:

Similarly, some patients in a qualitative study were surprised or offended to be told they were ‘at risk’ after screening, while others were unconcerned (Reimer 2012). Such differences may be due to preferences of individual patients, their experience of the patient-practitioner relationship or the way that risk information is conveyed. (Line 329-332)

24. Line 314: further comment is required. There are articles available on use of ONS in the community; cite these and modify the blanket statement that ONS is not effective in this setting (Reviewer 3).

RESPONSE: We agree that the statement about effectiveness of ONS in the community and added reference is a little stark, so we have modified it:

[ONS] may be effective in community settings (Elia 2016), but good quality prospective studies are needed to establish whether ONS is beneficial in primary care (DTB 2018). (Line 353-356)

25. Line 206, do not capitalize "One" and Line 365 "First" (Reviewer 3).

RESPONSE: We have amended as suggested, for example:

In three other interventions 40-42, participants received nutrition: one intervention provided participants with ONS (Line 230-232)

Limitations:

26. A further limitation to consider is the search starting after 2012 when the systematic review was completed. This original systematic review had a different purpose and it is likely that barriers/facilitators to screening existed in prior articles, but were not represented in that review (Reviewer 3).

RESPONSE: We agree that this could be seen as a limitation, so have added a comment in relation to search dates:
We included only studies published since the Cochrane review on dietary counselling and ONS (Baldwin 2012), yet barriers and facilitators to screen and treat may have been identified in studies published prior to 2012. However, only four studies identified by Baldwin et al focused on community-dwelling older adults, and we considered that practice is likely to have changed since these publications from 1985, 1995, 2003 and 2008. (Line 387-391)

27. Discuss limitations of using the MMAT for quality assessment (Reviewer 3).

RESPONSE: Added limitation about using MMAT for quality assessment:

The MMAT is a relatively new tool designed to assess the quality of a number of study types, and the number of ‘can’t tell’ classifications we made may indicate that improvements are needed. Thus, studies may have been well designed, but insufficient reporting and/or limitations of the MMAT reduced our ability to judge study quality. (Line 396-400)

Conclusion:

28. Conclusion: please relate clearly to the aim and do not repeat background information (like: "malnutrition … health care concern") (Reviewer 1).

RESPONSE: We agree and have removed background information:

In this synthesis we have identified multiple barriers to implementing screen and treat policies in primary/community care for both HCPs and patients. DELETED: Malnutrition in older, community-dwelling adults is a critical healthcare concern. (Line 427-430)

Also: we have stated more clearly how our aim has been addressed and key findings:

We have also identified possible facilitators to address these barriers, both from studies exploring HCPs’ and patients’ perspectives and from previously tested interventions. We have also identified barriers that were not addressed within the reviewed interventions….. (Line 432-436)

29. There is a need to conduct effectiveness studies to overcome the HCP skepticism for screening. Add this point to the conclusion paragraph (Reviewer 3).

RESPONSE: We agree that this is a useful suggestion, so we have added a recommendation for studies to address how to overcome HCP scepticism for screening:
We have also identified barriers that were not addressed within the reviewed interventions, but which could be addressed with well-designed intervention features (e.g. addressing misconceptions about ‘unhealthy’ food for older adults through education and overcoming HCP scepticism for screening). (Line 435-438)

Tables:

30. Please also explain abbreviations below the tables (like MMAT) (Reviewer 1).

RESPONSE: Added notes to explain abbreviations, for example:

Notes: BMI = Body Mass Index; MMAT = Mixed Methods Appraisal Tool; MNA-SF = Mini Nutritional Assessment-Short form (Tables 1-3 and 4-5)

References:

31. In References, there are some inconsistent expression. For example, some journals were described without abbreviation (e.g., ref 16, 20) and others did not and some papers did not show journals (e.g., ref 15) or individual numbers (e.g., ref 13 is prefer to describe as "2016;12:CD009840") (Reviewer 2).

Also: Ref. 57 seems to be under review. This may not be suitable for reference in the research paper. Please delete (Reviewer 2).

RESPONSE: Thank you for raising this. We have now checked references are correct and presented consistently.