PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Interventions for social isolation in older adults who have experienced a fall: A systematic review
AUTHORS	Tricco, Andrea; Thomas, Sonia; Radhakrishnan, Amruta; Ramkissoon, Naveeta; Mitchell, Gary; Fortune, Jennifer; Jiang, Ying; de Groh, Margaret; Anderson, Kerry; Barker, Joan; Gauthier-Beaupré, Amélie; Watt, Jennifer; Straus, Sharon

VERSION 1 – REVIEW

REVIEWER	Gettel, Cameron Yale University School of Medicine, Emergency Medicine
REVIEW RETURNED	27-Sep-2021

GENERAL COMMENTS	1. Introduction – Lines 87-89 and 93. I believe the authors would do better to avoid the discussion of the bidirectionality of falls and social isolation. While this may be true, this does not set up the question that this review is trying to answer, which is social isolation after falls. 2. Introduction – Lines 95-96, 'Interventions to mitigate…' is an overall weak statement, and should be expanded upon. 3. Introduction – The rationale for this systematic review is not completely fleshed out in the Introduction. For example, there is no mention of prior systematic or scoping reviews that have been completed on the topic, their limitations, and what specific knowledge gap this review addresses. The Introduction flow could be something along the lines of: Para. 1 – Falls are important. Para. 2 – Social isolation is important, and also common after falls. Para. 3 – Prior SRs linking these topics have shown XYZ. Limitations of those SRs are XYZ. Therefore, we sought to XYZ. 4. Methods – Search through February 2020. As 18 months have passed, can the authors perform an additional updated search to assess if additional relevant literature is now available? 5. Methods – Please report a Kappa coefficient for independent reviewer agreement. 6. Results – Lines 170-171, 'low risk of bias for baseline outcome measurements'. This is in agreement with Appendix 4, but Appendix 5 seems to have a discrepancy identifying that 3 of the 4 studies have low risk of bias for baseline outcome measurements. 7. Discussion – Seems underdeveloped. The authors discuss their findings as well as how this fits in with the extant literature (Gardiner et al.), but neglect to comment on how this review will impact on clinical practice or policy. Weak statements such as 'We recommend updating this systematic review as more literature becomes available on this topic' seems obvious, uninformative, and does not provide guidance to readers. Instead of identifying in the Limitations that 'future work could focus on developing consensus on measures for social isolation…', the authors might

	consider moving this to the main part of the Discussion and elaborating on which were used in the included studies, their individual merits, and what should be prioritized in future clinical and research endeavors. 8. Discussion – Lines 281-284. The authors again seem to have a keen interest on inserting content regarding the directionality of the relationship between falling and social isolation. Please remove this throughout the manuscript as it is not related to the work conducted, nor is it a natural question or future line of investigation that would come from the review's findings. 9. Table 1 and Appendix Table 4 – Requires a bit of clarification. Why did the included studies only include a mean of 9.3 to 30.2% of participants with a history of falling? I thought falling or a history of falling was a requirement – therefore, shouldn't it be 100%? If not, then is the population of interest if 70-90% do not have a history of falling? How are those studies relevant if assessing social isolation after fall/history of falling if a large portion of participants did not have a fall or history of falling? This seems like a central issue and requires clarification.

REVIEWER	Mays, Allison Cedars-Sinai Medical Center, Medicine
REVIEW RETURNED	29-Sep-2021

GENERAL COMMENTS	The authors seek to address whether the literature contains studies describing interventions to impact social isolation and loneliness in those who have experienced a fall and who are living in the community. The developing recognition of social isolation and loneliness as significant factors in the health and well-being of older adults, and the paucity of a standard of care for addressing this with an intervention, merit on-going investigations into meaningful actions clinicians and communities can take to improve these outcomes in older adults. Older adults who report falls, fear of falling, or to be at elevated fall risk, as the authors highlight, have been reported to have higher levels of social isolation and loneliness. There is certainly a need to better understand how to care for this vulnerable subset of older adults. The authors successfully describe the importance of this topic and outline a clear medical literature review methodology. While the topic is of importance and the authors have identified a gap in the literature, they note themselves, that their initial search protocol needed to be modified as no studies met their initial criteria. They identified four studies that met their revised criteria. While their conclusion that "few studies examined interventions for social isolation in older adults who experienced a fall" is true, it at this point does not add new information to the field compared to other published data. What could help to advance the next stage of work in addressing loneliness and social isolation in community dwelling older adults with a history of falling, would be to also examine to additional informative areas: 1) Interventions for falls that also examine loneliness or social isolation (see Zijlstra et al)1 2) Interventions for social isolation and loneliness among older adults who fall but whom are not community dwelling (assisted living or nursing home residents) (see Bell et al)2 By contrasting what is available in the medical literature in these related areas, while highlighting the absence of research specifically on community-dwelling older adults with falls, this would help others frame future areas of investigation.

	An additional area for improvement concerns the theoretical constructs as presented for social isolation and loneliness. As the authors note “a lack of consensus on measures for social isolation and loneliness,” there nonetheless has frequently existed a consensus that social isolation and loneliness are two distinct concepts (see de Jong Gierveld’s chapter) 3. De Jong Gierveld thoughtfully outlines multiple definitions of loneliness and social isolation. The authors define social isolation (lines 84-87) but do not define loneliness and use the terms interchangeably. The distinction is important because the different constructs may require different interventions. Generally, social isolation is more quantitative and objective – and at its most simple refers to the presence or absence of relationships with other people, and while there may be a quantitative and a qualitative component (see the Duke Social Support Index), it is distinct from loneliness. Loneliness can be defined as “the unpleasant experience that occurs when a person’s network of social relations is deficient in some way, either quantitatively or qualitatively”4. A further clarification that the research question encompasses both social isolation and loneliness from the outset is needed. Their attention to the need for evidence-based interventions for loneliness and social isolation in older adults who fall is very much appreciated as we seek to improve the lives of older adults in our communities. 1. Zijlstra GAR, van Haastregt JCM, Du Moulin MFMT, de Jonge MC, van der Poel A, Kempen GIJM. Effects of the Implementation of an Evidence-Based Program to Manage Concerns About Falls in Older Adults. The Gerontologist. 2012;53(5):839-849. 2. Bell CS, Fain E, Daub J, et al. Effects of Nintendo Wii on quality of life, social relationships, and confidence to prevent falls. Physical & Occupational Therapy in Geriatrics. 2011;29(3):213-221. 3. de Jong Gierveld J, Van Tilburg T, Dykstra PA. Loneliness and social isolation. Cambridge handbook of personal relationships. 2006:485-500. 4. Perlman D, Peplau LA. Toward a social psychology of loneliness. Personal relationships. 1981;3:31-56.

REVIEWER	Das Gupta, DEbasree Utah State University
REVIEW RETURNED	15-Oct-2021

GENERAL COMMENTS	TITLE: Interventions for social isolation in older adults who have experienced a fall: A systematic review Overall comment: Thank you for this manuscript on a timely topic. However, the manuscript suffers from several limitations the most important of which are outlined below. Review Checklist Please elaborate on any ‘No’ answers in the free text section below. 1. Is the research question or study objective clearly defined? -No • Lines 122-124: Interchangeable use of the two terms – social isolation is distinct and different from loneliness. Each is also

	conceptually distinct from the other. While social isolation is the objective absence or deficiency of social connections, loneliness, on the other hand, is the subjective perception of being or feeling lonely. Two individuals at the same level of social isolation may not experience loneliness in the same degree and vice versa. o The above terminological ambiguity needs to be sorted out so as to inform the framing of the PICOT question, study method (specifically study eligibility criteria), as well data/evidence synthesis (specifically in regard to impact of intervention on outcome). o Authors need to also address this point in the Discussion section. 2. Is the abstract accurate, balanced and complete? -Yes, but the presentation needs to improve (see comment under #15). 3. Is the study design appropriate to answer the research question? -No. • Why/how were the 4 databases selected? To qualify as a systematic review, the search needs to be exhaustive and capture * all * possible publications. Otherwise it is a “rapid review” – as-is, the current submission falls under this category presenting review findings from 4 articles. • In relation to the above, the authors should consider expanding the databases searched (for example, to PsycInfo). A quick search on PsycInfo yielded the below relevant article: Hwang, J., Wang, L., Siever, J., Del Medico, T., & Jones, C. A. (2019). Loneliness and social isolation among older adults in a community exercise program: A qualitative study. Aging & Mental Health, 23(6), 736–742. https://doiorg.dist.lib.usu.edu/10.1080/13607863.2018.1450835 • Additionally, the authors have not adequately justified their main inclusion criteria (= prior fallers though they relaxed it somewhat) other than stating social isolation interventions are of “paramount importance” (Line 95-96) in this group. However, isolation and loneliness as well as falls are common geriatric conditions. Thus this inclusion criteria (= prior fallers) leaves out findings from the larger population of studies addressing isolation and/or loneliness among older adults at risk of falls. • Lastly, the details of the methodology 1) are not sufficient (for example, date last searched is not provided; narrative on the method used for combining results from studies is inadequate) and 2) needs to be better presented (see comment under #15). 4. Are the methods described sufficiently to allow the study to be repeated? -No. • Much of the information presented in the Appendix needs to be integrated into the main text o For example, please integrate/present the full electronic search for the databases and grey literature searched (include a supporting table showing “tabulation of search protocol” table) in the main text. 5. Are research ethics (e.g. participant consent, ethics approval) addressed appropriately? -NA 6. Are the outcomes clearly defined? No. • See comments under #1 above.

	7. If statistics are used are they appropriate and described fully? -NA. The authors did not conduct a meta-analysis. 8. Are the references up-to-date and appropriate? -No. • The most recent literature is not cited. A few illustrative examples are below. • Social isolation/loneliness: Holt-Lunstad, J., Smith, T.B., Baker, M, Harris, T., Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspectives on Psychological Science, 10 (2), 227-37. doi: 10.1177/1745691614568352. PMID: 25910392. • Social isolation<=>falls: Hayashi, T, Umegaki, H, Makino, T., Huang, C.H., Inoue, A., Shimada, H., & Kuzuya, M. (2020). Combined Impact of Physical Frailty and Social Isolation on Rate of Falls in Older Adults. The Journal of Nutrition, Health & Aging, 24(3), 312-318. doi: 10.1007/s12603-020-1316-5. PMID: 32115613. 9. Do the results address the research question or objective? -Yes. 10. Are they presented clearly? -No. A few illustrative examples: • Line 171-172: what are these other biases? • Line 169-178: very hard to follow this information, consider providing this as an accompanying information in the study characteristics table (instead of Appendix 2) • Also, please replace “Appendix 2: Study Characteristics” with a more detailed table and integrate it with the main text. 11. Are the discussion and conclusions justified by the results? Yes. 12. Are the study limitations discussed adequately? Yes. 13. Is the supplementary reporting complete (e.g. trial registration; funding details; CONSORT, STROBE or PRISMA checklist)? -Yes. 14. To the best of your knowledge is the paper free from concerns over publication ethics (e.g. plagiarism, redundant publication, undeclared conflicts of interest)? -Yes. 15. Is the standard of written English acceptable for publication? -Yes. But, • the narrative in the entire manuscript needs to be organized and presented better – in its current form, it reads mostly descriptive, especially the Discussion section.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Cameron Gettel, Yale University School of Medicine

Comments to the Author:
1. Introduction – Lines 87-89 and 93. I believe the authors would do better to avoid the discussion of the bidirectionality of falls and social isolation. While this may be true, this does not set up the question that this review is trying tonswer, which is social isolation after falls.
Response: We have removed the description of the bidirectionality of falls and social isolation as suggested in the introduction section.

2. Introduction – Lines 95-96, 'Interventions to mitigate…' is an overall weak statement, and should be expanded upon.
Response: We added the following line to provide examples of interventions to expand on this statement: on lines XX to YY "Examples of interventions may include participating in social activities, outreach calls from peers or healthcare workers, and group exercise."

3. Introduction – The rationale for this systematic review is not completely fleshed out in the Introduction. For example, there is no mention of prior systematic or scoping reviews that have been completed on the topic, their limitations, and what specific knowledge gap this review addresses. The Introduction flow could be something along the lines of: Para. 1 – Falls are important. Para. 2 – Social isolation is important, and also common after falls. Para. 3 – Prior SRs linking these topics have shown XYZ. Limitations of those SRs are XYZ. Therefore, we sought to XYZ.
Response: We searched for relevant reviews and only identified one that was somewhat related, which is already outlined in our discussion on lines XX to YY: "Gardiner et al. (2016) conducted an integrative review…" To avoid duplication of material, we prefer to keep any discussion of previous reviews to the discussion section. We clarified that this was the only review identified on lines XX to YY: "We searched for previous reviews that were related and only one was identified."

We expanded on our background section by adding a definition of loneliness on lines XX to YY "Loneliness is another consequence that may occur after a fall and can be defined as "the unpleasant experience that occurs when a person's network of social relations is deficient in some way, either quantitatively or qualitatively" and providing more information on the differences between social isolation and loneliness on lines XX to YY "Although social isolation and loneliness are related, it is important to note that they are two distinct concepts. Social isolation is more objective, as it can be measured by examining the presence or absence of relationships with other people, whereas loneliness is a person's subjective experience and is more difficult to measure. This distinction is important, as different interventions might be required for each of these outcomes after experiencing a fall."

4. Methods – Search through February 2020. As 18 months have passed, can the authors perform an additional updated search to assess if additional relevant literature is now available?
Response: Unfortunately, we do not have additional funding to support an update of this review, so it would not be feasible to assess if additional relevant literature has been published since our search date. We stated such a limitation of our work on lines XX to YY: "We were unable to update our literature search due to a lack of sufficient funding."

5. Methods – Please report a Kappa coefficient for independent reviewer agreement.

Response: As screening was conducted by multiple pairs of reviewers, a kappa coefficient cannot be easily calculated. We chose to report the proportion of studies for which agreement was achieved to reflect this more clearly.

6. Results – Lines 170-171, 'low risk of bias for baseline outcome measurements'. This is in agreement with Appendix 4, but Appendix 5 seems to have a discrepancy identifying that 3 of the 4 studies have low risk of bias for baseline outcome measurements.
Response: We thank the reviewer for catching this inconsistency and have revised Appendix 5 accordingly.

7. Discussion – Seems underdeveloped. The authors discuss their findings as well as how this fits in with the extant literature (Gardiner et al.), but neglect to comment on how this review will impact on clinical practice or policy. Weak statements such as 'We recommend updating this systematic review as more literature becomes available on this topic' seems obvious, uninformative, and does not provide guidance to readers. Instead of identifying in the Limitations that 'future work could focus on developing consensus on measures for social isolation…', the authors might consider moving this to the main part of the Discussion and elaborating on which were used in the included studies, their individual merits, and what should be prioritized in future clinical and research endeavors.
Response: We have added additional information in the discussion section on lines XX to YY "Furthermore, additional examination of tailoring interventions to reduce loneliness and/or social isolation is warranted, as there was a dearth of included studies to examine this fully in this systematic review with two studies each focusing on social isolation and loneliness separately. Further research is warranted on this, as social isolation and loneliness are distinct concepts and different interventions may be required to target each outcome separately."

8. Discussion – Lines 281-284. The authors again seem to have a keen interest on inserting content regarding the directionality of the relationship between falling and social isolation. Please remove this throughout the manuscript as it is not related to the work conducted, nor is it a natural question or future line of investigation that would come from the review's findings.
Response: We have removed all mention of the directionality of the relationship between falling and social isolation throughout the manuscript as suggested.

9. Table 1 and Appendix Table 4 – Requires a bit of clarification. Why did the included studies only include a mean of 9.3 to 30.2% of participants with a history of falling? I thought falling or a history of falling was a requirement – therefore, shouldn't it be 100%? If not, then is the population of interest if 70-90% do not have a history of falling? How are those studies relevant if assessing social isolation after fall/history of falling if a large portion of participants did not have a fall or history of falling? This seems like a central issue and requires clarification.
Response: We agree and have clarified that not all participants experienced a fall across the included studies in the methods section lines XX to YY "Studies were eligible for inclusion if they described any intervention for social isolation in older adults (mean age 65 years and older) with any participant reporting a history of falling (i.e., regardless of the proportion of the sample who fell) and who lived independently in a community setting." This was already mentioned as a limitation in the discussion section of the manuscript we originally submitted on lines XX to YY: "We deviated from our protocol slightly to allow for inclusion of studies where only some participants had a history of falling, given the paucity of data on older adults in a community setting who had experienced a fall." We also noted the proportion of individuals who experienced a fall in each study in the results section in the original manuscript that was submitted.

Reviewer: 2
Dr. Allison Mays, Cedars-Sinai Medical Center

Comments to the Author:
1) The authors seek to address whether the literature contains studies describing interventions to impact social isolation and loneliness in those who have experienced a fall and who are living in the community. The developing recognition of social isolation and loneliness as significant factors in the health and well-being of older adults, and the paucity of a standard of care for addressing this with an intervention, merit on-going investigations into meaningful actions clinicians and communities can take to improve these outcomes in older adults.
Older adults who report falls, fear of falling, or to be at elevated fall risk, as the authors highlight, have been reported to have higher levels of social isolation and loneliness. There is certainly a need to better understand how to care for this vulnerable subset of older adults. The authors successfully decribe the importance of this topic and outline a clear medical literature review methodology.
Response: We thank the reviewer for their thoughtful review and helpful feedback on our manuscript.

2) While the topic is of importance and the authors have identified a gap in the literature, they note themselves, that their initial search protocol needed to be modified as no studies met their initial criteria. They identified four studies that met their revised criteria.
While their conclusion that "few studies examined interventions for social isolation in older adults who experienced a fall" is true, it at this point does not add new information to the field compared to other published data.
What could help to advance the next stage of work in addressing loneliness and social isolation in community dwelling older adults with a history of falling, would be to also examine to additional informative areas:
1) Interventions for falls that also examine loneliness or social isolation (see Zijlstra et al)1
2) Interventions for social isolation and loneliness among older adults who fall but whom are not community dwelling (assisted living or nursing home residents) (see Bell et al)2
By contrasting what is available in the medical literature in these related areas, while highlighting the absence of research specifically on community-dwelling older adults with falls, this would help others frame future areas of investigation.
1. Zijlstra GAR, van Haastregt JCM, Du Moulin MFMT, de Jonge MC, van der Poel A, Kempen GIJM. Effects of the Implementation of an Evidence-Based Program to Manage Concerns About Falls in Older Adults. The Gerontologist. 2012;53(5):839-849.
2. Bell CS, Fain E, Daub J, et al. Effects of Nintendo Wii on quality of life, social relationships, and confidence to prevent falls. Physical & Occupational Therapy in Geriatrics. 2011;29(3):213-221.
Response: While we appreciate the reviewer's suggestion, these articles are not fully aligned with our research question (though related), and we are concerned that they will distract from our focus on providing interventions to reduce social isolation and/or loneliness after experiencing a fall.

3) An additional area for improvement concerns the theoretical constructs as presented for social isolation and loneliness. As the authors note "a lack of consensus on measures for social isolation and loneliness," there nonetheless has frequently existed a consensus that social isolation and loneliness are two distinct concepts (see de Jong Gierveld's chapter) 3. De Jong Gierveld thoughtfully outlines multiple definitions of loneliness and social isolation. The authors define social isolation (lines 84-87) but do not define loneliness and use the terms interchangeably. The distinction is important because the different constructs may require different interventions. Generally, social isolation is more quantitative and objective – and at its most simple refers to the presence or absence of relationships with other people, and while there may be a quantitative and a qualitative component (see the Duke Social Support Index), it is distinct from loneliness. Loneliness can be defined as "the unpleasant experience that occurs when a person's network of social relations is deficient in some way, either quantitatively or qualitatively"4.
A further clarification that the research question encompasses both social isolation and loneliness from the outset is needed.

3. de Jong Gierveld J, Van Tilburg T, Dykstra PA. Loneliness and social isolation. Cambridge handbook of personal relationships. 2006:485-500.
4. Perlman D, Peplau LA. Toward a social psychology of loneliness. Personal relationships. 1981;3:31-56 PubMed .
Response: We expanded on our background section by adding a definition of loneliness on lines XX to YY “Loneliness is another consequence that may occur after a fall and can be defined as “the unpleasant experience that occurs when a person’s network of social relations is deficient in some way, either quantitatively or qualitatively” and providing more information on the differences between social isolation and loneliness on lines XX to YY “Although social isolation and loneliness are related, it is important to note that they are two distinct concepts. Social isolation is more objective, as it can be measured by examining the presence or absence of relationships with other people, whereas loneliness is a person’s subjective experience and is more difficult to measure. This distinction is important, as different interventions might be required for each of these outcomes after experiencing a fall.”

We provided the definitions in the methods section on lines XX to YY “Social isolation was defined as a decrease in the number of social contacts, decreased feeling of belonging, reduced or lack of fulfilling relationships, decreased engagement with others, and reduced quality of the members in one’s network[5]. Loneliness was defined as “the unpleasant experience that occurs when a person’s network of social relations is deficient in some way, either quantitatively or qualitatively.

We indicated which interventions focused on social isolation, loneliness, or both in the results section on lines XX to YY “Cohen et al. (2006) conducted a non-randomized controlled trial in the United States assessing the effects of singing in a chorale to reduce loneliness compared to usual care in 166 older adults.” And XX to YY “Scharlach et al. (2015) conducted an uncontrolled before-after study in the United States assessing the effectiveness of their ElderHelp Concierge Club intervention on social isolation in a sample of 21 participants.” And XX to YY “Franse et al. (2018) conducted a quasi-experimental study comparing the effectiveness of the Urban Health Centres Europe (UHCE) approach compared to usual care on loneliness in a sample of 1,844 older adults across the United Kingdom, Greece, Croatia, the Netherlands, and Spain.” And XX to YY “Dolovich et al. (2019) conducted a randomized controlled trial comparing the effectiveness of the Health TAPESTRY (Health Teams Advancing Patient Experience: STRengthening qualitY) intervention compared to usual care on social isolation in a sample of 312 older adults in Canada.”

We also provide further comment on this in the discussion on lines XX to YY “Furthermore, additional examination of tailoring interventions to reduce loneliness and/or social isolation is warranted, as there was a dearth of included studies to examine this fully in this systematic review with two studies each focusing on social isolation and loneliness separately. Further research is warranted on this, as social isolation and loneliness are distinct concepts and different interventions may be required to target each outcome separately.”

4) Their attention to the need for evidence-based interventions for loneliness and social isolation in older adults who fall is very much appreciated as we seek to improve the lives of older adults in our communities.
Response: We thank the reviewer for acknowledging the importance of this research topic and how it can impact the lives of older adults.
Reviewer: 3
Dr. DEbasree Das Gupta, Utah State University

Comments to the Author:

Overall comment:

Thank you for this manuscript on a timely topic. However, the manuscript suffers from several limitations the most important of which are outlined below.
Response: Thank you for the review of our paper.

Review Checklist
Please elaborate on any 'No' answers in the free text section below.
1. Is the research question or study objective clearly defined?
- No
- Lines 122-124: Interchangeable use of the two terms – social isolation is distinct and different from loneliness. Each is also conceptually distinct from the other. While social isolation is the objective absence or deficiency of social connections, loneliness, on the other hand, is the subjective perception of being or feeling lonely. Two individuals at the same level of social isolation may not experience loneliness in the same degree and vice versa.
- The above terminological ambiguity needs to be sorted out so as to inform the framing of the PICOT question, study method (specifically study eligibility criteria), as well data/evidence synthesis (specifically in regard to impact of intervention on outcome).
- Authors need to also address this point in the Discussion section.
Response: We expanded on our background section by adding a definition of loneliness on lines XX to YY "Loneliness is another consequence that may occur after a fall and can be defined as "the unpleasant experience that occurs when a person's network of social relations is deficient in some way, either quantitatively or qualitatively" and providing more information on the differences between social isolation and loneliness on lines XX to YY "Although social isolation and loneliness are related, it is important to note that they are two distinct concepts. Social isolation is more objective, as it can be measured by examining the presence or absence of relationships with other people, whereas loneliness is a person's subjective experience and is more difficult to measure. This distinction is important, as different interventions might be required for each of these outcomes after experiencing a fall."

We provided the definitions in the methods section on lines XX to YY "Social isolation was defined as a decrease in the number of social contacts, decreased feeling of belonging, reduced or lack of fulfilling relationships, decreased engagement with others, and reduced quality of the members in one's network[5]. Loneliness was defined as "the unpleasant experience that occurs when a person's network of social relations is deficient in some way, either quantitatively or qualitatively.

We indicated which interventions focused on social isolation, loneliness, or both in the results section on lines XX to YY "Cohen et al. (2006) conducted a non-randomized controlled trial in the United States assessing the effects of singing in a chorale to reduce loneliness compared to usual care in 166 older adults." And XX to YY "Scharlach et al. (2015) conducted an uncontrolled before-after study in the United States assessing the effectiveness of their ElderHelp Concierge Club intervention on social isolation in a sample of 21 participants." And XX to YY "Franse et al. (2018) conducted a quasi-experimental study comparing the effectiveness of the Urban Health Centres Europe (UHCE) approach compared to usual care on loneliness in a sample of 1,844 older adults across the United Kingdom, Greece, Croatia, the Netherlands, and Spain." And XX to YY "Dolovich et al. (2019) conducted a randomized controlled trial comparing the effectiveness of the Health TAPESTRY (Health Teams Advancing Patient Experience: STRengthening qualitY) intervention compared to usual care on social isolation in a sample of 312 older adults in Canada."

We also provide further comment on this in the discussion on lines XX to YY "Furthermore, additional examination of tailoring interventions to reduce loneliness and/or social isolation is warranted, as there was a dearth of included studies to examine this fully in this systematic review with two studies each focusing on social isolation and loneliness separately. Further research is warranted on this, as social isolation and loneliness are distinct concepts and different interventions may be required to

target each outcome separately."

2. Is the abstract accurate, balanced and complete?
-Yes, but the presentation needs to improve (see comment under #15).

3. Is the study design appropriate to answer the research question?
- No.
- Why/how were the 4 databases selected? To qualify as a systematic review, the search needs to be exhaustive and capture * all * possible publications. Otherwise it is a "rapid review" – as-is, the current submission falls under this category presenting review findings from 4 articles.
- In relation to the above, the authors should consider expanding the databases searched (for example, to PsycInfo). A quick search on PsycInfo yielded the below relevant article:
Hwang, J., Wang, L., Siever, J., Del Medico, T., & Jones, C. A. (2019). Loneliness and social isolation among older adults in a community exercise program: A qualitative study. Aging & Mental Health, 23(6), 736–742. https://doi-org.dist.lib.usu.edu/10.1080/13607863.2018.1450835
Response: We disagree with the reviewer's assessment that our review would be a rapid review instead of a systematic review simply based on the number of databases searched. Our search strategy was developed by an experienced information specialist and was peer reviewed by a second information specialist using the PRESS checklist, as recommended in the Cochrane Handbook. According to the Cochrane Handbook, only two electronic databases need to be searched for the literature search to be considered comprehensive and free of bias. In addition, we conducted a search of grey literature, and scanned the references of included studies and relevant reviews to ensure we were not missing any relevant studies. The article identified by the reviewer was captured in our search but was excluded by our reviewers given that the primary goal of the intervention was fall prevention. The knowledge users who commissioned this review specified that interventions for fall prevention would not be of interest, and so this was incorporated in our exclusion criteria.

- Additionally, the authors have not adequately justified their main exclusion criteria (= prior fallers though they relaxed it somewhat) other than stating social isolation interventions are of "paramount importance" (Line 95-96) in this group. However, isolation and loneliness as well as falls are common geriatric conditions. Thus this exclusion criteria (= prior fallers) leaves out findings from the larger population of studies addressing isolation and/or loneliness among older adults at risk of falls.
Response: We understand the reviewer's concern regarding the review being focused on individuals with a history of falling. However, this decision was made in consultation with the knowledge users who commissioned the review. They indicated that they were not interested in interventions for social isolation and/or loneliness in span style="font-family:'Times New Roman'; font-style:italic">all older adults, as this would not meet their decision-making needs. They were specifically interested in interventions for social isolation and/or loneliness in older adults who had already experienced a fall. As no studies met this strict inclusion criteria, we again consulted our knowledge users, and they agreed to relax our exclusion criteria to allow for the inclusion of studies where at least a proportion of the study population had a history of falling.

- Lastly, the details of the methodology 1) are not sufficient (for example, date last searched is not provided; narrative on the method used for combining results from studies is inadequate) and 2) needs to be better presented (see comment under #15).
Response: We have clearly stated the date last searched in our methods section under the "Search strategy and selection criteria" subheading (Lines XX to YY). Our methods for combining results from studies are described under the "synthesis" subheading of the methods section. We note that meta-analysis and network meta-analysis were not feasible given the number of studies that were identified for inclusion, and the fact that each of the included studies evaluated different interventions, which

precluded us from combining their results. Therefore, a descriptive approach was used to summarize the findings. This is described on lines XX to YY of the manuscript.

4. Are the methods described sufficiently to allow the study to be repeated?
-No.
- Much of the information presented in the Appendix needs to be integrated into the main text
o For example, please integrate/present the full electronic search for the databases and grey literature searched (include a supporting table showing "tabulation of search protocol" table) in the main text.
Response: We appreciate the reviewer's suggestion, however the editor has indicated that they require the search strategies to remain in the supplementary material, so we have not made this change.

5. Are research ethics (e.g. participant consent, ethics approval) addressed appropriately?
-NA

6. Are the outcomes clearly defined?
No.
- See comments under #1 above.
Response: We have clarified the differences between social isolation and loneliness in the background, methods, results, and discussion.

7. If statistics are used are they appropriate and described fully?
-NA. The authors did not conduct a meta-analysis.

8. Are the references up-to-date and appropriate?
-No.
- The most recent literature is not cited. A few illustrative examples are below.
- Social isolation/loneliness:

Holt-Lunstad, J., Smith, T.B., Baker, M, Harris, T., Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspectives on Psychological Science, 10 (2), 227-37. doi: 10.1177/1745691614568352. PMID: 25910392.
- Social isolation<=>falls:

Hayashi, T, Umegaki, H, Makino, T., Huang, C.H., Inoue, A., Shimada, H., & Kuzuya, M. (2020). Combined Impact of Physical Frailty and Social Isolation on Rate of Falls in Older Adults. The Journal of Nutrition, Health & Aging, 24(3), 312-318. doi: 10.1007/s12603-020-1316-5. PMID: 32115613.
Response: These papers are not relevant to our research question so were not included to not confuse the readers. However, we have added additional references to clarify social isolation and loneliness.

9. Do the results address the research question or objective?
-Yes.

10. Are they presented clearly?
-No. A few illustrative examples:
- Line 171-172: what are these other biases?
- Line 169-178: very hard to follow this information, consider providing this as an accompanying information in the study characteristics table (instead of Appendix 2)
- Also, please replace "Appendix 2: Study Characteristics" with a more detailed table and integrate it with the main text.

Response: The “other bias” is a component on the Cochrane risk of bias tool and we mainly focused on the potential for funding bias, which has been clarified on lines XX to YY: “All of the studies had low risk of bias for baseline outcome measurements (100% low, 0% unclear, 0% high), and other bias (mainly funding bias; 100% low, 0% unclear, 0% high).” This information is already presented in Table 1, perhaps the reviewer missed this. All the information is presented in Table 1, Appendix 1 and Appendix 2, as we noted in the original manuscript that was submitted.

11. Are the discussion and conclusions justified by the results?
Yes.
12. Are the study limitations discussed adequately?
Yes.
13. Is the supplementary reporting complete (e.g. trial registration; funding details; CONSORT, STROBE or PRISMA checklist)?
-Yes.
14. To the best of your knowledge is the paper free from concerns over publication ethics (e.g. plagiarism, redundant publication, undeclared conflicts of interest)?
-Yes.
15. Is the standard of written English acceptable for publication?
-Yes. But, the narrative in the entire manuscript needs to be organized and presented better – in its current form, it reads mostly descriptive, especially the Discussion section.
Response: The discussion is descriptive by its very definition. Furthermore, only four studies were identified so no analyses were conducted and as such, our results are reported descriptively.

VERSION 2 – REVIEW

REVIEWER	Mays, Allison Cedars-Sinai Medical Center, Medicine
REVIEW RETURNED	26-Jan-2022

GENERAL COMMENTS	While appreciative of the revisions made, the current scope of the review does not meaningfully add to the existing literature. Would recommend broadening the scope and impact to include other settings (nursing home) to make a more significant contribution going forward.

VERSION 2 – AUTHOR RESPONSE

Reviewer # 2 Comments:

1. While appreciative of the revisions made, the current scope of the review does not meaningfully add to the existing literature. Would recommend broadening the scope and impact to include other settings (nursing home) to make a more significant contribution going forward.

Response: While we appreciate the reviewers’ comment, we respectfully disagree. This was the population of most relevance to decision-makers from the Public Health Agency of Canada who commissioned this review and this is now noted in our manuscript.