Author’s response to reviews

Title: Low back pain in older adults: risk factors, management options and future directions

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Author’s response to reviews:

RE: SCOL-D-17-00001- "Low back pain in older adults: risk factors, management options and future directions"

Dear Editor,

The authors would like to express our gratitude to you and the Reviewers for all of your time and effort devoted to the review of our manuscript. The Reviewers’ comments were indeed extremely insightful and greatly appreciated. Accordingly, the authors would like to take this opportunity to address each and every comment the Reviewers raised in their review of our submission. Additionally, where appropriate, we have also revised our manuscript accordingly. Any changes in the paper are highlighted in blue.

We believe that the Reviewers’ comments have significantly helped improve the quality of our manuscript. We hope that you and the Reviewers will find our revised work suitable for publication in Scoliosis and Spinal Disorders.

REVIEWER #1

Comment 1:
This is a well written narrative review for management of low back pain (LBP) especially among older adults. The authors wrote numerous topics on LBP. Further, future research has been addressed.

Response:

The authors want to thank the Reviewer for his/her positive comment and support of our work

Comment 2:

What did the author think of older age? The authors referred several papers. Variation in the term of old age seem to be existed. Although it is difficult to define the old age, the author should address the focused age as old adults in introduction. This might be useful for avoidance of misunderstanding.

Response:

The authors thank the Reviewer for his/her comment. While there are different definitions of older adults (e.g. 60 years or above, or 65 years or older), we have highlighted in the revised manuscript that the current review focuses on various LBP related issues among older people aged 60 years or older (See Introduction session, Page 5, Line 15), which is based on the definition of “older people” according to the World Health Organization.

Comment 3:

The authors had the session of conservative treatment of LBP. However, there is no description regarding surgical treatment of LBP. Although there is no definitive consensus on the topic of surgical treatment of LBP, previous guidelines had some comments on it. Thus, the authors should describe briefly about it.

Response:

We thank the Reviewer for his insightful comment. We agree that a brief summary of various surgical procedures can enrich the content of this review. As such, we have briefly described several common surgical approaches for older people with LBP (See “Lumbar Surgery” section, Page 28, line 53 to page 31, line 32).

Comment 4:
The incidence of vertebral osteomyelitis in old patients is increasing in recent years. This is important evidence. The authors should add a comment and refer the paper below.


Response:

We are grateful for the Reviewer’s suggestion and recommended references. We have added the additional information regarding spinal infection (both vertebral osteomyelitis and pyogenic spondylodiscitis in the revised manuscript (See “Spinal infection” section, Page 10, line 34 to page 12, line 10).

Reviewer #2

Comment 1:

This is a very interesting article about LBP in elderly.

There are some points that could be helpful to improve to provide more details to readers

Please prepare a structured abstract

Response:

Thank you for your comments. We understand that a structured abstract will provide information in a more organized manner. However, since the instructions of the current journal require the abstract of a review article to be non-structured, we need to use a non-structured abstract accordingly. In order to improve the organization of the abstract, we have revised it (See Abstract, Page 2).
Comment 2:

Can you give more details about the number of articles retrieved and considered? Even if this is a narrative review, it seems the authors have been quite systematic in their approach.

Response:

The authors would like to thank the Reviewer for this thoughtful suggestion. Our search strategy yielded 2182 related citations. The current review included information from 320 articles. We have added this piece of information to the revised manuscript (See “Search Strategy and Selection Criteria” section, Page 6, Line 1 to 3).

Comment 3:

It would be very interesting to know more about the prevalence of non-specific LBP and secondary LBP in elderly. It seems secondary LBP to be more frequent than in younger adults.

Response:

The authors highly appreciate the Reviewer’s comment. We were set to provide the prevalence of various diagnoses of LBP in older adults. Unfortunately, since there is only a paucity of research examining this topic, we can only report the prevalence of some, but not all, specific LBP diagnoses in older adults. In view of this gap, we have highlighted that future studies should investigate the prevalence of various LBP diagnoses in older adults (See “Future Research” section, Page 31, line 39 to 52).

Comment 4:

Can you add more details about the impact of spinal deformities in elderly in terms of predisposition to pain?

Response:

The authors want to thank the Reviewer for his insightful suggestion. We have added an additional discussion on a common spinal deformity in older adults (de novo degenerative lumbar scoliosis) and its relation with low back pain (See “De novo degenerative lumbar scoliosis” section, Page 9, line 7 to 56).
Comment 5:
Can you give more details about the role of yellow flags in the genesis of chronic LBP in elderly? It seems that many of the usual yellow flag that can influence LBP in younger patients are not so relevant in elderly.

It would be interesting to expand more the section about treatment.

Response:
We thank the Reviewer for his comment. In addition to anxiety and depression, the revised manuscript has included discussion on the relations between various yellow flags (e.g. fear-avoidance beliefs, pain catastrophizing, kinesiophobia) and chronic LBP in older adults. While anxiety, depression and fear avoidance beliefs have consistently demonstrated negative impacts on the LBP-related disability of older people, inconsistent findings have also been reported for other yellow flags. Different study designs, cultures, and social factors may modify the effects of yellow flags on chronic LBP development and propagation. As such, future studies should clarify the influences of individual yellow flag on LBP progression among older adults. The findings may help develop optimal multimodal treatment approaches for older adults with LBP (See “Modifiable Risk Factors” section, Page 19, line 2 to Page 20, line 15).

Comment 6:
In the paragraph about objective evaluation of the spine, can the authors comment about the clinical usefulness of this tools? In my experience, there is not a clear connection between spinal impairment and movement limitation and LBP.

Response:
Thank you for your suggestion. While not all physical impairments are related to functional or clinical outcomes, some physical impairments (e.g. limited range of motion or poor trunk muscle endurance) may affect patient’s ability to perform functional tasks. Unfortunately, since most clinical examinations for LBP rely on manual assessments (e.g. manual muscle testing or manual spinal stiffness testing), they may not be sensitive enough to detect structural/functional anomalies or to monitor treatment progress. In addition, the lack of objective assessments may limit clinicians’ ability to identify the underlying causes of LBP that can guide interventions. Recent advances in technology have provided opportunities for clinicians to visualize or quantify spinal impairments unprecedentedly in a clinical setting. For instance, ultrasonography and elastography can be adopted to quantify the morphometry and stiffness of paraspinal muscles, respectively. These findings in turn can guide the prescription of exercise therapy or biofeedback intervention. Similarly, various novel imaging sequences and genetic analysis may provide new information to help make diagnosis. Taken together, clinicians should integrate objective
outcomes with other clinical findings in order to guide clinical decision making. We have emphasized that objective assessments can only be used as adjunct tools for clinicians to make clinical decision (See “Future Research” section, Page 33, line 1 to 59).