

## Peer Review File

Article information: <https://dx.doi.org/10.21037/jss-23-26>

### Reviewer A

#### Comment 1:

I miss a real take at home message from the abstract: what did we learn from this review?

Line: Abstract

**Reply:** Thank you for the comment. We have made the following changes to the abstract to reflect the overall findings of this systematic review. Ultimately, this scoping review demonstrated that the current literature is comprised of many retrospective studies with limited analysis of global sagittal alignment. As such, there exists a large area for future study which we have highlighted that should focus on longitudinal prospective cohorts. As with all scoping review, specific recommendations are limited due to the nature of the study type.

Updated Line: 31-36 on page 1

**Revised Text:** Although, there is an increasing prevalence of studies investigating sagittal spinal alignment parameters in DLS surgery the quality of the currently available literature on this topic is of overall low evidence and largely retrospective in nature. Additionally, there is limited analysis of global sagittal spinal alignment in DLS suggesting that future investigational emphasis should prioritize longitudinally followed large prospective cohorts or multi-centre randomized controlled trials.

#### Comment 2:

Search strategy should be added to the suppl material

Line: Methods

**Reply:** Thank you for your comment. We have added additional information regarding the search strategy employed by the current study to the supplemental material. This includes the description of our search ie; the authors performed a grey literature search to confirm inclusion of all applicable studies by reviewing references for all included studies. Additionally, our methodology for study identification is elucidated in the methods section, line 92-142.

#### Comment 3:

Is there a suppl list attached with the studies included?

Line: Results

**Reply:** Thank you for your comment, we have attached a supplemental list with all 109 included studies.

**Revised Text:** Supplemental list

#### Comment 4:

What were those techniques

Line: Line 223

**Reply:** Thank you for your comment. We have made the following alterations to the manuscript

Updated Line: 187-189 on page 8

**Revised Text:** Of all studies included, 29 (27%) reported on the use of minimally invasive techniques to include endoscopic/microendoscopic techniques, percutaneous pedicle screw fixation, and minimally invasive interbody fusions from a variety of approaches.

**Comment 5:**

Isn't the absence of a recommendation because of lack of studies a limitation?

**Reply:** Thank you for your comment. The authors agree that specific recommendations would be helpful and insightful to the readers. However, this would be outside the breadth of the goals of a scoping review and represent an important focus for future studies. We have, however, added a sentence as follows to further highlight the limitations of the scoping review study in general

Updated Line: lines 271-273

**Revised Text:** Our scoping review has several limitations. Firstly, it is subject to limitations associated with this specific study methodology in which the goal is to map the current body of literature

**Reviewer B**

**Comment 1:**

Which proportion of the studies have established effect of sagittal alignment on patient-reported outcomes?

Line: Line 249-254

**Reply:** Thank you for this comment, we have made the following adjustments to the manuscript to denote the proportion of papers which evaluated patient reported outcomes in the context of sagittal alignment.

Updated Line: Line 220-221, Page 9

**Revised Text:** Notably, of the 88 studies reporting patient reported functional outcomes, only 18 analyzed these in the context of overall sagittal spinal alignment

**Comment 2:**

As a minor detail (intro line 105) authors likely are not proposing pelvic incidence as a compensatory mechanism? Maybe it would be unambiguous to reformat this phrase

Line: Line 105

**Reply:** Thank you for this comment. We agree that as previously written the sentence does seem to suggest pelvic incidence to be a compensatory mechanism which it is not. As such we have reformatted the sentence to be unambiguous and accurate.

Updated Line: Line 70-72, Page 3

**Revised Text:** To compensate for sagittal spinal imbalance, individuals with DLS tend to have increased pelvic tilt (PT), sacral slope (SS) and lumbar lordosis (LL) compared to healthy individuals in addition to patients with lumbar spinal stenosis without anterolisthesis.