Reviewer’s report

Title: An immediate effect of PNF specific mobilization on the angle of trunk rotation and the Trunk-Pelvis-Hip Angle range of motion in adolescent girls with double idiopathic scoliosis – a pilot study

Version: 0 Date: 26 Aug 2016

Reviewer: Gozde Gur

Reviewer's report:

Ms. Number: SCOL-D-16-00033

Title: The short-time effect of PNF specific mobilization on the angle of trunk rotation and spinal mobility in adolescent girls with idiopathic scoliosis

Scoliosis and Spinal Disorders

Reviewers' comments:

1. In abstract, the authors are stated that the purpose of this study was to decrease the difference of range of motion in the transverse plane between the right and left sides in the trunkpelvis-hip complex, expressed as Trunk-Pelvis-Hip Angle, in girls with adolescent idiopathic scoliosis. How would you know at the start of the study that all your scoliosis subjects had range of motion limitation in the transverse plane? Is that your inclusion criteria? Otherwise, there is a need for a healthy control group to make a decision on that. Please clarify the purpose of this study considering results.

2. The article requires some grammatical attention. For example in abstract, the statement "mean +SD:13.71.9" needs to be 13.7±1.9. There is a need to report scoliotic curve angles in degrees (°).

3. In background, there is some disunity between the paragraphs. In background, in the second paragraph, authors reported that measurement of the angle of trunk rotation (ATR) is an important part of examination in scoliosis. However, a standard physical examination does not include assessment of the spine rotation range. But why do you prefer to investigate spine rotation range? What is its importance? Please explain the relationship between ATR and spinal rotation range with literature, in this paragraph.
4. In background, 3rd paragraph, lines 62-63, the statement "In the present authors' opinion there is a relationship between the ATR and the mobility of the spine and pelvis in the transverse plane." refers that one purpose of this study is to investigate this relationship. In lines 69-72, the purpose of this study was reported to develop a method to reduce the differences between the values of the Trunk-Pelvis-Hip Angle (TPHA) on the left and right side of the body in girls with idiopathic scoliosis during motion of the trunk-pelvis-hip complex in the transverse plane. Is this purpose, another purpose of the study? In addition, selected patterns of Proprioceptive Neuromuscular Facilitation (PNF) were used to increase the limited range of motion (ROM). What was the reason for choosing especially PNF method? What does the literature tells about effects of PNF method on improving ROM? In what problems, PNF was previously used? Furthermore, what are other techniques to improve ROM in patients with scoliosis? Why did the authors especially choose the PNF method?

5. In methods section, what was the reason for including 83 subjects to the study? Did the authors make any power analyses for determining sample size? Please consider and report in statistical analyses section.

6. In page 5, lines 104-110, What do you mean with short-term effect? How long did you give the PNF training? Was it one session? If it was one session, how long did it take? And how did you determine this?

7. In methods section, Did the patients receive previously any other treatment? or was patients receiving any other treatment during PNF training period? Reporting should include these information.

8. The measurement techniques, such as ATR and TPHA, require citations in methods section.

9. In results section, what was the number of subjects, who was eligible for this study? Did you have any drop out? Please provide information. In addition, a flow chart may be added.
10. In the first paragraph of results section, it seems that this study includes mild and moderate curves, both. Were patients wearing a spinal brace during the study? If they were wearing, this data should be provided.

11. In discussion, what did your study demonstrate? Please state first. What was your main outcome and what was its importance in the literature?

12. Discussion section needs some revisions and grammatical considerations. First of all, positive effects of PNF in this study are short-term effects. This should be emphasized. In addition please discuss in which ways PNF provided these positive effects on ROM and ATR?

13. In page 12, lines 267-268, how would PNF alter spatial orientation of the spine with short time application? Please reconsider and clarify.

14. In page 13, lines 289-292, Authors stated "A reduction in the angle of trunk rotation contributes to improved appearance while increased ROM in the TPHA test may influence the respiratory function as reduced mobility of the vertebral column and thorax is a factor responsible for respiratory dysfunction." These effects might occur as a result of the long-term application of the PNF method. The short-term effect of PNF may not address these changes. Please reconsider this statement.

15. In page 14, lines 307-308, What is the relation of this statement "The differences between the ranges of TPHA left and TPHA right observed in our study may be related to gait asymmetry." with your hypothesis?

16. What are the limitations of this study?

17. In conclusion section, the effects should be emphasized as short-term effects.
18. The title is "The short-time effect of PNF specific mobilization on the angle of trunk rotation and spinal mobility in adolescent girls with idiopathic scoliosis" But the authors investigated the short-time effect of PNF specific mobilization on the angle of trunk rotation and TPHA ROM. The spinal mobility is a general term and includes many aspects. Please reconsider to change the title.

**Level of interest**
Please indicate how interesting you found the manuscript:

An article of importance in its field

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests
I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal