

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Sex-related differential item functioning of the Jenkins Sleep Scale: a cross-sectional study among 77,967 employees in the Finnish public sector
<b>AUTHORS</b>	Juhola, Juhani; Arokoski, J. P. A.; Ervasti, Jenni; Kivimäki, Mika; Vahtera, Jussi; Myllyntausta, Saana; Saltychev, Mikhail

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Sieminski, Mariusz Medical University of Gdansk, Department of Emergency Medicine
<b>REVIEW RETURNED</b>	29-Aug-2023

<b>GENERAL COMMENTS</b>	<p>Dear Authors, You have performed a very interesting study on Jenkins Sleep Scale focusing on its psychometric properties. Although the project is planned and realized in a very sound manner You have collected a population dominated by (1)women and (2) persons in middle and older age . You have performed an elegant analysis on the issue of gender. For full picture of the reliability of JSS in Finnish population I would like to see a similar analysis of difficulty, discrimination and differential item functioning (DIF) in context of age. I would suggest performing analysis for subjects below and above 50 years old. It may be a part of this publication or its continuation. I do not have further comments.</p>
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<b>REVIEWER</b>	Climent-Sanz, Carolina University of Lleida, Nursing and Physiotherapy
<b>REVIEW RETURNED</b>	05-Dec-2023

<b>GENERAL COMMENTS</b>	<p>This manuscript offers new insight into the psychometric properties of the JSS, with a special focus on sex-related DIF. I would recommend accepting this manuscript for publication. However, there is only one recommendation I would make before publishing it:</p> <ol style="list-style-type: none"> <li>1. In the methods section, please explain briefly the Finnish Public Sector study.</li> <li>2. There are a couple of typos: pg 5 line 33 I believe that instead of "Item response a theory" the authors meant "Item response theory". pg 7 line 6 the sentence should have only one full stop before 'The' instead of two.</li> </ol>
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## VERSION 1 – AUTHOR RESPONSE

### Responses to the comments made by the Reviewer 1

#### Comment 1

For full picture of the reliability of JSS in Finnish population I would like to see a similar analysis of difficulty, discrimination and differential item functioning (DIF) in context of age. I would suggest performing analysis for subjects below and above 50 years old. It may be a part of this publication or its continuation. I do not have further comments.

#### Response 1

We had considered the similar DIF analysis based on age groups. It is possible that we are going to conduct such an analysis as a separate further study. We have the following text in the “recommendations for further research” section at the end of the discussion:

*“Further research may reveal the potential DIF of the JSS among people of different age groups...”*

### Responses to the comments made by the Reviewer 2

#### Comment 1

In the methods section, please explain briefly the Finnish Public Sector study.

#### Response 1

We have now re-written the FPS description. Please, see our response to the Editor’s comment #5.

#### Comment 2

There are a couple of typos: pg 5 line 33 I believe that instead of "Item response a theory" the authors meant "Item response theory".

pg 7 line 6 the sentence should have only one full stop before 'The' instead of two.

#### Response 2

We have now corrected these typos.