Reviewer's report

Title: Quality analysis of smart phone sleep apps in China: Can apps be used to conveniently screen for obstructive sleep apnea at home?

Version: 0 Date: 13 Jun 2019

Reviewer: Hyo Soung Cha

Reviewer's report:

Abstract

This paper analyzed the quality of the information provided by the sleep apps regarding obstructive sleep apnea (OSA). The author scaled several evaluation criteria, including the scientific basis, functionality and usability, and accountability, to determine the quality of apps. The results summarized the quality of 127 apps which fulfilled their inclusion criteria with statistical analysis and showed that multifunctional apps were more reliable for screening the obstructive sleep apnea.

Novelty

The author proposed a novel summarized report regarding with quality information of sleep apps.

Strong point

1. The author analyzed the quality of the information for sleep apps with various evaluation criteria, and well summarized the result.

Weakness point

1. Line 153 evaluation procedure, what are the criteria for allocated points for scientific basis (16 items, 32 points), functionality and usability (11 items, 12 points), and accountability (9 items, 9 points)

2. To diagnose OSA, it requires PSG information, which is generally used to diagnose sleep disorders. Although the Scientific Basis evaluation criteria evaluate whether selected apps can show PSG information such as EEG, EOG, ECG, etc., it is uncertain whether a user's result of analysis of PSG information through apps accurately diagnose with OSA. As this paper is to
evaluate the quality of apps for analyzing the information for screening OSA with convenience, it also should evaluate whether the result of OSA diagnosis with selected apps can be agreed with doctors' diagnosis. We suggest that the author should describe the accuracy of screening tests with apps, including the use of smart wearable devices, in relation to the sensitivity and specificity analysis.

3. The author should illustrate the previous studies that have done regarding this study's topic.

Detail comment

1. Line 119, denote abbreviation information for OSAHS

2. The author should denote reference in line 126 that is "we used functionality evaluation criteria reported in previous studies to appraise the functionality of several apps, and then adjusted the criteria according to the actual situation."

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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

Acceptable
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