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OPEN PEER REVIEW

Validation of the BESTest for Measuring Balance in People with Multiple Sclerosis

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

1 comment · 15 Jan 2022

Editor-in-Chief

MAJOR REVISION 15 Jan 2022

Dear Authors
According to the reviewers' and associate editor's comments, your article requires major revision. Please respond to the associate editor's and reviewers' comments and submit the required files.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear chief

Thanks to you all, dear referees and dear editor,

I'm writing about the manuscript with the title "Validation of the BESTest for Measuring Balance in People with Multiple Sclerosis" Let me acknowledge that all your points, insights, and questions were specifically considered in this revision, and accordingly, all relevant corrections in response to your questions were meticulously made as bellow:

The following explanations were added for the clarity of the subject and a complete answer to the opinions of the respected judges in the mentioned sections:

Reviewers 1:

Thanks to your kind attention that resulted in the quality improvement of this research. We have answered each of your points below:

Response 1. The present study is a concurrent validity and to avoid bias, a therapist performed the tests in one day, taking into account the rest time for the patient. It should be noted that due to the fact that in objective tests, the software provides raw data to the examiner and finally is done using analysis software, there are no bias problems in this type of tests. Also, to perform a functional BESTest, the presence of a tester minimizes the amount of bias, although past studies have shown that this test has good inter-tester reliability (Ref 12).

Response 2. The aim of this study was to evaluate the validity of a functional test with an objective test, and all tests were performed taking into account the rest time for each person in one day, and the criterion for admission was based on EDSS (ref 3). The test is performed only on patients with the ability to walk, so it is not necessary to evaluate different types of patients separately.

Response 3. Corrections were made **(line 22)**

Reviewers 2:

Thanks to your kind attention that resulted in the quality improvement of this research. We have answered each of your points below:

The present study is a concurrent validity and to avoid bias, a therapist performed the tests in one day, taking into account the rest time for the patient. It should be noted that due to the fact that in objective tests, the software provides raw data to the examiner and finally is done using analysis software, there are no bias problems in this type of tests. Also, to perform a functional BESTest, the presence of a tester minimizes the amount of bias, although past studies have shown that this test has good inter-tester reliability (Ref 12).

Reviewers 3:

Thanks to your kind attention that resulted in the quality improvement of this research. We have answered each of your points below:

Comment 1(*Abstract*). Corrections were made.

Comment 2(*introduction*). In previous studies, the clamp test has only been performed with functional tests. However, performance tests can have disadvantages including: Ceiling effect (Tinetti, BBS), floor effect (CB&M), Low sensitivity (BBS), Low specificity (Tinetti), and limitations in the assessment of static or dynamic equilibrium (OLS). On the other hand, tests such as FRT, OLS, TUG evaluate a small part of the activities and are ineffective in providing information about postural control systems.

References were added to the text. **(Line 55)**

Comment 3 (material and method).

1. Changes were applied throughout the text
2. Corrections were made **(line 67)**
3. the authors considered the minimum sample size that was calculated according to the formula

$$n=\frac{\left(z_{\alpha}+z_{\beta}\right)^{2}}{d^{2}}\,d=(0.5)\ln\left(\frac{1+r}{1-r}\right)$$ **(REF 17, line 80-86)**

4. Description added **(line 77-80)**
5. Cognitive health has been one of the criteria for inclusion in the study because the test has several sections and it was necessary for people to understand how to perform the test. For this reason, the MMSE criterion was used for reliability. Also, in studies, a score of 24 or higher of this test is considered as a criterion for a normal cognitive level. Reference added to text **(REF 16).**
6. Biomechanics Laboratory of Research Sciences University
7. Due to the fact that in the present study, each healthy person was selected in accordance with the patient's biographical characteristics, age differences did not create an obstacle in conducting the study. For example, if a person with MS aged 50 years, height 165 and weight 60 has entered the study, a healthy person 50 years old with height 165 and 60 kg has been invited to study. Also, considering that in examining the correlation results of the tests, all individuals have been studied in terms of BESTest and objective testing at the same time, so age is not an interfering factor.

Comment 4(Results*).* Corrections were made & description was added in the table footnote.

Comment 5(Discussion*)*. Corrections were made **(line 234-244 & 308-311)**

Comment 6(Conclusions). Corrections were made **(line 305-306)**

2 Revision 1

1 comment · 27 Feb 2022

Editor-in-Chief

MINOR REVISION 27 Feb 2022

Dear Authors
Based on the reviewers' and associate editor's comments, your article needs minor revision. Please respond to the reviewers' comments and submit the required files. In addition, please cite two related articles published in the MEJRH.

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Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

The authors did not provide a point-by-point response to the reviewers' comments in this round.

3 Revision 2

1 comment · 5 Apr 2022

Editor-in-Chief

MINOR REVISION 5 Apr 2022

Dear Authors
Thank you for improving the quality of the article. However, some grammatical problems are still observed in the manuscript. It is suggested that the article be edited by a native English-speaking editor.
Please outline every change in the manuscript and submit the file.

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Revision 3

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

The authors did not provide a point-by-point response to the reviewers' comments in this round.

4 Revision 3

1 comment · 12 Apr 2022

Editor-in-Chief

ACCEPT 12 Apr 2022

Dear Authors
We are pleased to inform you that your article is accepted for publication in the MEJRHS. We hope to receive other qualified articles from your group.