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OPEN PEER REVIEW

Diagnostic Value of Trabecular Bone Score in Osteoporosis

Alireza Rajaei, Khatereh Mohammadi, Mahbobeh Oroei, Faraneh Farsad

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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.

More about open peer review: brieflands.com/knowledgebase/opr

Contents

1 **Original submission** Referee 1, Referee 2, Abtin Doroudinia, Editor-in-Chief 2

2 **Revision 1** Referee 1, Abtin Doroudinia, Referee 3, Associate Editor, Editor-in-Chief 4

Authors' reply to reviewers 5

Reviewer and editor comments 9

3 **Revision 2** Editor-in-Chief 10

Authors' reply to reviewers 11

Reviewer and editor comments 12

1 Original submission

4 comments · 19 Oct 2022 – 19 Nov 2022

Referee 1 Reviewer

MINOR REVISION 19 Oct 2022

Thanks to the authors for their submission to the IJR.
It can be mentioned that this manuscript has an appropriate scientific writing structure, a sufficient sample size, and appropriately presented results; however, it needs the following edits:
General
1. Lack of novelty: There are some similar works on this topic. Therefore, a statement of novelty and necessity should be added to the introduction.
2. English editing is essential.
Abstract
3. Objective: After "bone mineral density (BMD)", add a description of it as the gold standard method.
4. Method: The word "Analytical" should be replaced by "cross-sectional".
5. Method: The sentence "The Pearson correlation coefficient was calculated between it." should be deleted, and Kappa statistics should be used instead of the correlation coefficient.
6. Results: Demographic characteristics should be presented first, followed by Kappa and validity measures.
7. Conclusion: Each abbreviation, such as DXA, should be written in full at first use.
Full-Text
8. Method:
8.1. The phrase "In this study" should be edited as follows: In this cross-sectional study
8.2 Inclusion criteria should be added.
8.3. The phrase "Exclusion criteria included" should be changed to "Exclusion criteria contained".
8.4. A reference should be cited for the categorization of BMD and TBS.
8.5. Statistical analysis:
8.5.1. This section should start with descriptive measures such as the mean and standard deviation (SD) or number and percentage for continuous and categorical data, respectively.
8.5.2. When there is a gold standard method, it is better to use validity measures. Therefore, it is not appropriate to use the correlation coefficient, and the sentence "The Pearson correlation coefficient was estimated between BMD and TBS." should be deleted.
8.5.3. You mentioned that "We calculated diagnostic value of TBS for abnormal results of BMD (osteopenia+osteoporosis)". It would be better to perform this calculation separately for osteopenia vs. osteoporosis, osteopenia vs. normal, and osteoporosis vs. normal.
Tables
9. Table 1 should present all data as mean (SD) or number (%) and should not use sex as a category. Sex should be moved to a row.
10. Results of TBS and BMD can be presented according to the variables in table 1.
11. Table 2 should be presented along with Kappa statistics.
12. The total row and column should be deleted from table 3.
13. A ROC curve should be added.

Referee 2 Reviewer

REJECT 23 Oct 2022

The subject was not novel, and many other studies with appropriate designs have been done on this issue.

Abtin Doroudinia Reviewer

MINOR REVISION 3 Nov 2022

Thank you for sending this interesting article to be considered for publication in IJR.
Osteoporosis and subsequent fractures are a major risk for the elderly population, and precise evaluation is a very important health measure.
It is well documented that routine DEXA evaluations have some limitations. The results of DEXA could be misleading in elderly patients, secondary to degenerative changes in the spine, for example. Therefore, alternative methods for bone mineral measurements should be sought.
In my opinion, the results of this article could be interesting if confirmed in further studies.
I recommend:
1- As the TBS method is a relatively new method, please provide a brief explanation of this method and its score values, including what scores are considered normal or abnormal. Please mention these in the method section.
2- Please elaborate on risk factors for T-Score Discordance as a potential downside of DEXA. You may refer to this article:
Doroudinia A, Colletti PM. Bone Mineral Measurements. Clin Nucl Med. 2015 Aug;40(8):647-57; quiz p 653-7. doi: 10.1097/RLU.0000000000000860. PMID: 26147459

Good Luck

Editor-in-Chief

MAJOR REVISION 19 Nov 2022

Dear authors,
Your article needs Major Revision.
Regards

2

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.

Response to Dear Reviewers' Comments:

Thank you for three reviewers' opinions. The following sentences are responses that identified with yellow color.

Reviewer 1:
Thanks to the authors for their submission to the IJR.
It can be mentioned that this manuscript has appropriate scientific writing structure, sufficient sample size, and results presentation; but it needs some editions as follows:

General
1. Lack of novelty: There are some similar works on this topic. Therefore, it is necessary that the novelty and necessity statement be added to the introduction.

Considering the dependence of osteoporosis on race and also the lack of evidence about comparison between TBS and BMD in the Iranian population, so this study can be useful for investigating the role of TBS in the diagnosis of osteoporosis in the target population.

2. English edition is essential.

It was done.

Abstract
3. Objective: After "bone mineral density (BMD)" added as gold standard method.

It was added and marked with yellow color

4. Method: Analytical word replaced by cross-sectional.

It was replaced by cross-sectional and marked with yellow color

5. Method: This sentence "The Pearson correlation coefficient was calculated between it." should be deleted and rather than correlation coefficient be used of Kappa statistics.

Pearson correlation was deleted and added kappa statistic.

6. Results: At first should be presented demographic characteristics, and then Kappa and validity measures.

It was corrected and marked with yellow color

7. Conclusion: Each abbreviation like as DXA should be written in full form for the first time.

It was done and marked

Full-Text
8. Method:
8.1. This sentence "In this study" edited as this manner: In this cross-sectional study

It was corrected

8.2 Inclusion criteria should be added

It was added and marked with yellow color

8.3. This sentence "Exclusion criteria included" edited as "Exclusion criteria contained"

It was corrected

8.4. It should be referred a reference for categorization of BMD and TBS.

It was added and marked with yellow color (reference 14)

8.5. Statistical analysis:
8.5.1. At first, it should be start with descriptive measures like as mean and standard deviation (SD) or number and percentage for continuous and categorical data, respectively.

It was added and marked with yellow color

8.5.2. When there is a gold standard method, it is better that used of validity measures. Therefore, it isn't appropriate to be used of correlation coefficient; and so, this sentence "The Pearson correlation coefficient was estimated between BMD and TBS." should be deleted.

The Pearson correlation was deleted.

8.5.3. You mentioned that "We calculated diagnostic value of TBS for abnormal results of BMD (osteopenia+osteoporosis)". It is better that this calculation separately to be done for osteopenia vs. osteoporosis, osteopenia vs. normal, and osteoporosis vs. normal.

The diagnostic value of TBS was calculated based on findings of BMD which changes have been mentioned in statistical methods and result.

Tables
9. Table 1 should be presented totally as mean (SD) or number (%) and without sex category. Sex should be transferred to the row.

It was done.

10. Results of TBS and BMD can be presented according to variables of table 1.

It is presented in table 2.

11. Table 2 should be presented along with Kappa statistics.

In table 3 , kappa statistics is included.

12. Total row and column should be deleted from table 3. This table changed based on findings of TBS and BMD in main variables

It was corrected

13. ROC curve should be added.

Those curves are presented in figure1.

Reviewer 2:
Thank you for sending this interesting article to be considered for publication at IJR.
Osteoporosis and subsequent fractures are a major risk for elderly population and precise evaluation is very important health measure.
It is well documented that routine DEXA evaluations has some limitations. The results of DEXA could be misleading in elderly patients, secondary to degenerative changes in the spine for example. Therefore alternative methods for bone mineral measurements should be sought.
In my opinion the results of this article could be interesting if approved in further studies.
I recommend:
1- As TBS method is relatively new method, please provide brief explanation about this method and score values and what scores are considered normal or abnormal. please mention these in the method section.

Thank you for your recommendations, so it is included in method section.

2- Please elaborate more about risk Factors of T-Score Discordance as a potential down side of DEXA. You may refer to this article:
Doroudinia A, Colletti PM. Bone Mineral Measurements. Clin Nucl Med. 2015 Aug;40(8):647-57; quiz p 653-7. doi: 10.1097/RLU.0000000000000860. PMID: 26147459

The mentioned article was used in introduction and discussion.

Reviewer 3:
The subject was not novel and many other studies with appropriate design has been done on this issue.

Considering the dependence of osteoporosis on race and also the lack of evidence about comparison between TBS and BMD in the Iranian population, so this study can be useful for investigating the role of TBS in the diagnosis of osteoporosis in the target population.

2 Revision 1

5 comments · 4 Mar 2023 – 4 May 2023

Referee 1 Reviewer

ACCEPT 4 Mar 2023

Thanks to the authors for the appropriate revisions.
Currently, this manuscript is acceptable from a methodological perspective.

Abtin Doroudinia Reviewer

ACCEPT 22 Mar 2023

Thank you for revising the manuscript and providing answers to the reviewer's comments.
Although the subject of the research cannot be considered novel, the lack of national data from the Iranian population makes this article worthy of publication in IJR.
We look forward to more sophisticated articles from the authors.

Referee 3 Reviewer

MINOR REVISION 8 Apr 2023

dear authors
Thank you for performing this study. Osteoporosis is an important medical issue, especially for elderly people.
In my opinion, your article needs English editing.
sincerely yours

Associate Editor

ACCEPT 12 Apr 2023

Dear Editor in chief

The article was reviewed by 3 reviewers and needs language editing.
The novelty is low, but this study in the Iranian population is useful.
with best regards

Editor-in-Chief

MINOR REVISION 4 May 2023

Dear authors,
Your article needs Minor Revision.
Regards

3

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.

Reply to Reviewers' Comments:

Reviewer 1: Thank you for your opinions.

Reviewer 2: Thank you for your opinions.

Reviewer 3: Thank you for your comments. English writing editing was done.

Reviewer 4: Thank you for your suggestion. We added to the mentioned part of A, B, and C to the figure.1 legend and highlighted in the manuscript.

Reply to Associate Editor's Comments:

Associate Editor 1: Thank you for your opinions. English writing editing was done.

Associate Editor 2: Thanks to your suggestions, all the mentioned items were corrected in the order of the numbers of the suggestions and all changes were highlighted as lines/paragraphs.

3 Revision 2

1 comment · 18 Jun 2023

Editor-in-Chief

ACCEPT 18 Jun 2023

Dear authors,
Your article is acceptable for publication in IJR.
Regards