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OPEN PEER REVIEW

Combined Effect of Repetitive Transcranial Magnetic Stimulation and Cognitive Rehabilitation on Working Memory of Patients with Chronic Stroke

Yaser Farahmandi Najafabadi, Minoo Kalantari, Ashkan Irani, Aliyeh Daryabor, Alireza Akbarzadeh Baghban

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About this report

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1 Original submission

1 comment · 9 Apr 2022

Editor-in-Chief

MAJOR REVISION 9 Apr 2022

Dear Authors
According to the reviewer’s and associate editor’s comments, your article requires major revision. When revising your manuscript, please consider all issues mentioned in the reviewers' comments carefully: please outline every change made in response to their comments and submit the required files.

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.

Reviewer 1:
There are review and meta-analytic studies that confirm the effects of rTMS on the enhancement of memory and cognition in stroke patients. Explain the innovation of this research further. In fact, what is the difference between this study and other previous studies in this field? Make the information gap more vivid.

Dear reviewer, thank you for your attention. We added some recent systematic review and meta-analysis (2021) in the introduction[1-3].

Since WM is part of Cognition, please address it in the introduction in the form of Cognitive Disorders.

Thank you for your attention. We addressed that in the second paragraph of introduction as follows:

Post-stroke cognitive impairment includes disorder in executive function, memory, attention, language, and spatial visual function[4]. Working memory is an executive function that is impaired in stroke patients [5].

Please insert references for the inclusion and exclusion criteria.

Thank you so much for your attention. We added the related reference in inclusion and exclusion. criteria.

What was the cut-off point to assess the working memory subscale through WAIS for the enrollment in the study?

Dear reviewer, we consider minimum score 8 on WAIS in age between 55 and 75 years based on the validity and ratability of WAIS in Iran.

So, we revised the sentence to some extent and added the related reference to the sentence as follows:

minimum score 8 on Digit Span subscale of the Wechsler Adult Intelligence Scale (WAIS)[6].

What was the randomization method?

Thank you so much for your attention. We added randomization procedure into two groups in the method section as follows:

Regarding the randomization allocation, due to sampling consecutive method in the present study, the random allocation was also conducted consecutively. It is noteworthy that only one rehabilitation center was sampled. In this study, simple randomization procedure was utilized and randomization unit was individual. For this aim, individuals with the even number assigned

to them (by order of referral) were included in the experimental group, and participants with the odd number assigned to them were included in the control group.

Please provide flowcharts of project participants as well.

Thank you so much for your attention. We added the study flowchart of project as Figure 1.

Did everyone complete the protocol? Please report.

Yes, all people completed the study protocol. We added the following in the results:

In this study, 18 stroke patients (9 people in each group) completed the study protocol and analyzed (Figure 1).

Given that computer tests were used for rehabilitation exercises, were neglected vision tests used to assess the visual status of individuals before entering the study? Did you use any Visual Neglect Test to determine unilateral spatial neglect in patients?

Dear reviewer, all patients were evaluated for unilateral neglect by Catherine Bergego Scale.

So, we added above sentence in the method (inclusion criteria section).

Mention the rTMS model and the name of the manufacturer and the country of manufacture of the device.

Thank you so much for your attention. We added as follows:

frequently activated rTMS (super rapid 2, Magstim, England) with a frequency of 10 Hz included 60 one-second stimulations (10 pulses) …….

Was a special test used to check that people were right-handed?

We used “Edinburgh Handedness Inventory” for assessing the dominance of a person's right or left hand in everyday activities.

So we added Edinburgh Handedness Inventory to the text.

Was the type of stroke hemorrhagic or ischemic?

We included both type of hemorrhagic or ischemic. So, we added the following the text:

18 stroke patients (both type of hemorrhagic or ischemic)

What was the statistical method used to assess the level of pre-study memory states between the two groups?

Thank you so much for your attention. We added the following in the statistical analysis section:

Also, level of pre-study memory states (Wechsler test) between the two groups was assessed by Independent t-test.

Write the findings section more completely. Refer to the statistical findings on the differences within and between groups.

We tried to write the findings section more completely. Please check the text.

"The induce of long-term potentiation (LTP) and long-term depression (LTD) also affects the plasticity of nerve cells in the brain". This sentence should be used with caution because it is not certain.

Thank you so much for your attention. We tried to mention the sentence with caution as follows:

It seems that according to the theory,

Correct grammatical errors

We edited all manuscript in the revision. We hope the manuscript quality is satisfactory now.

Please insert the exact value of p in Table 1.

Thank you for your attention. We reported exact value of p in Table 1.

Please insert the CI values and the F values in Table 2.

Thank you for your attention. We reported them in Table 2.

The discussion is very concise. There are review studies in this area that are recommended to be used for discussion.

Thank you for your attention. We tried to modified the discussion and also added some recent review.

There is something wrong with referencing sentences. You are referencing an article that the article itself has adapted from another article. Please refer to the original article in phrases. WM is one of the cognitive components. If other cognitive components are used in this design,

its data must be reported. An N-back test alone can not be effective in examining the effect of rTMS on working memory.

-Regarding the referencing, we checked whole manuscript for referencing. We can assure you that all references are compatibles with the sentences now.

-Also, we did not used other cognitive tests in this design.

-Concerning N-back test, we used the n-back task to assess changes in working memory performance in the present study. Also, some previous studies used just this test for assessing working memory[7-9].

In general, the article has studied a good subject but has not observed the exact principles of writing a scientific article, whether in the introduction section or in the data reporting section, discussion and even the exact method of presenting the intervention and evaluating the data. Therefore, the authors of the article are strongly recommended to carefully study similar articles in this field to improve the method of writing the article to the desired level.

Thank you so much for your attention. We did our best to addressed all reviewers' comments Also, we added some recent reviews in the discussion. We hope the revised manuscript as well as our answers to the reviewers are satisfactory now.

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2 Revision 1

1 comment · 18 May 2022

Editor-in-Chief

MAJOR REVISION 18 May 2022

Dear Authors,
Before the review process continues at MEJRH, please complete the items below:
1. Check the conflicts of interest.
2. Upload a sample of informed consent during submission.
3. State the ethical approval code with a direct link.
4. State the clinical trial registration code on the journal website.

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

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3 Revision 2

3 comments · 27 May 2022 – 28 May 2022

Referee 1 Reviewer

MINOR REVISION 27 May 2022

Many thanks to the authors of the article entitled "Combined effect of repetitive transcranial magnetic stimulation and cognitive rehabilitation on working memory of patients with chronic stroke" for addressing the referee's comments. The quality of the article has improved to an almost acceptable level. Addressing the few remaining issues would make the article acceptable. Thank you for your cooperation in improving the quality of the article.

Lines 71-73 do not seem to provide an acceptable justification for a knowledge gap. Please find more compelling reasons from the mentioned reference.
Reference No. 24, which has been cited as a reference for the inclusion criteria, does not appear to be relevant to the text. Please use the correct reference.

Associate Editor

MINOR REVISION 27 May 2022

Many thanks to the authors of the article for addressing the referee's comments. The quality of the article has improved to an almost acceptable level. There are only a few remaining issues to address to make the article acceptable. Thank you for your cooperation in improving the quality of the article.

Editor-in-Chief

MINOR REVISION 28 May 2022

Dear Authors
According to the reviewers' and associate editor’s comments, your article requires minor revision. When revising your manuscript, please consider all issues mentioned in the reviewers' comments carefully: please outline every change made in response to their comments and submit the required files.

4

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.

Reviewers' Comments:

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Many thanks to the authors of the article entitled: "Combined effect of repetitive transcranial magnetic stimulation and cognitive rehabilitation on working memory of patients with chronic stroke" for addressing the referee's comments. The quality of the article has improved to an almost acceptable level. There are only a few cases left that would make the article acceptable. Thank you for your cooperation in improving the quality of the article.

Dear reviewer, many thanks for your positive evaluation of the manuscript. I hope our revisions as well as our answers are satisfactory.

Line 71-73 seems not to be an acceptable justification for a knowledge void. Please find more compelling reasons from the mentioned reference.

Thank you for your valuable comment. We modified that section as follows:

“The authors of study review concluded that one of the limitations of their study was heterogeneity among studies due to different evaluation scales and different stimulation parameters such as stimulation position (Left DLPFC/ Right DLPFC/ Bilateral Frontal Lobe), intensity (60-120%MT) and frequency (0.5-10Hz). So more investigations are required to explore the optimum stimulus outcomes [21]. In this regard, we aimed to deal with the amount of stimuli in each session when using high frequency rTMS.”

Reference No. 24, which has been cited as a reference for inclusion criteria, does not appear to be relevant to the text. Please use the correct reference.

Thank you for your valuable comment. Please check the text as follows:

“This number (8 ± 2) is selected based on the average age group of 55 years and above, which is reported in the Persian version of the Wechsler memory test by Sadegh Nasiri et al. [24] (Appendix).”

4 Revision 3

1 comment · 12 Jun 2022

Editor-in-Chief

ACCEPT 12 Jun 2022

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