OPEN PEER REVIEW

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What is "Open Peer Review" process?

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Advantages of "Open Peer Review" process

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- Prevents reviewers from following their individual agendas and leading to the detection of reviewers' conflicts of interests

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Peer Review Report for "Effects of Heat and WiFi (2.4 GHz) Exposure on Rat Cardiovascular System"

Author(s): Mehrzad Jafari, Ehsan Masoudi, Narges Sotoudeh, Seyede Fatemeh Hosseini

Review Timeline:

Submit Date: 25 Oct 2021
Revised Date: 19 Mar 2022
Accepted Date: 18 Apr 2022

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

Vida Zaroushani: Reviewer | Revision (0) — 6 Dec 2021

Dear Editor
there are comments in the reviewed manuscript.
with regards,

Seyed Ehsan Samaei: Reviewer | Revision (0) — 16 Dec 2021

1. The phrase animal study should be given in the title.
2. The abstract should be written quantitatively and qualitatively approach.
3. The conclusion in the abstract section, is general and has poor content so this section needs to be rewritten.
4 How to write in the "Introduction" is acceptable. As a suggestion to the authors, in the early part of the introduction, please mention the statistics and information on the importance of exposure to Heat subsequent Wifi radiation in population-based or workplace, as well as the economic burden of effect should be reported.
5. "Introduction" section needs to address the research gap and the importance of this study.
6. Materials and Methods section is acceptable.

7. The research strengths and limitations of the study should be clarified at the end of the “Discussion” section.
8. suggestions for future studies should be mentioned.

Ebrahim Taban: Associate Editor | **Revision** (0) 16 Dec 2021

Reviewer 1
1- English editing is required for the manuscript.
2- sample size calculations were not described.
3- at the end of the introduction the necessity of Investigation the heat in mixed of wifi is not described.
4- exposure situation to heat and Wifi is not clear.
5- these methods must be described in detail
6- based on the type of statistical test, the results and discussion are not valid.

Reviewer 2
1. The phrase animal study should be given in the title.
2. The abstract should be written quantitatively and qualitatively approach.
3. The conclusion in the abstract section, is general and has poor content so this section needs to be rewritten.
4 How to write in the "Introduction" is acceptable. As a suggestion to the authors, in the early part of the introduction, please mention the statistics and information on the importance of exposure to Heat subsequent Wifi radiation in population-based or workplace, as well as the economic burden of effect should be reported.
5. "Introduction" section needs to address the research gap and the importance of this study.
6. Materials and Methods section is acceptable.
7. The research strengths and limitations of the study should be clarified at the end of the “Discussion” section.
8. suggestions for future studies should be mentioned.

Ramazan Mirzaei: EIC | **Revision** (0) 24 Dec 2021

Dear Author

According to reviewer comments, the manuscript needs “Major revision”.
Best Regards

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Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

Ebrahim Taban: Associate Editor | **Revision** (1) 5 Mar 2022

Dear Dr. Hosseini,
please send a separate file of the response to the reviewer.
With kind regards,

Ramazan Mirzaei: EIC | **Revision** (1) 8 Mar 2022

Dear Author

According to reviewer comments, the manuscript need “Major revision”.
Best Regards

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Dear Associate Editor:

We highly appreciate the detailed valuable comments of the reviewers on our manuscript. The suggestions were very useful for us and we incorporated them into the revised paper. We have referred to the literature and reconstructed the paper to improve the quality of our paper. I would like to clarify some of the points raised by the Reviewers. The Changes made in the article are marked in yellow color.

Respond to the first reviewer's comments:

We thank you for the reviewer's comment, before answering your question.

1- Reviewer #1:

We thank you for the good comment and your idea. We correct the Introduction.

1- English editing is required for the manuscript.

The English language of the document was modified.

2- sample size calculations were not described.

Materials and Methods were corrected.

1- Experimental design and Exposure system

In this study, we opted for a rat model consisting of 32 male Sprague-Dawley rats weighing 210-240 g. All animal procedures were performed under the standards and rules established by the Animal Care and Ethics Committee of the University. The rats were first randomly divided into four groups: group I: rats were not exposed to heat or WIFI waves, group II: Rats exposed to Wi-Fi 2.45GHz for 2 h/day, 52 consecutive days, group III: Rats exposed to heat; in a water bath at 43°C for10 minutes/day, 52 consecutive days,

group IV (heat+ Wi-Fi): Rats exposed to 2.45GHz for 2 h/day then were placed in a water bath at 43°C for10 minutes/day waves (14).

2- Stereological study

For stereological evaluation, the heart was dissected out and weighed, and the heart's primary volume “V (Heart)” was measured using the immersion method according to the method of Scherle (1970). The time-consuming consecutive sectioning of the heart, which is needed for estimation based on the Cavalieri principle, was eluded by estimation of the degree of shrinkage “d (shr)”. Estimating the “d (shr)” and tubule length requires isotropic uniform random sections. These sections were prepared according to the “orientation method”. Totally; 8-12 slabs were collected from each heart. Afterward, a circle was punched out from a random heart slab by a trocar and the area of the piece was calculated. Then, the slabs and circular pieces were processed, sectioned (4 and 25 µm thick), and stained with Hematoxylin-Eosin(Figure 1). The area of the circular piece and the degree of shrinkage “d (shr)” were calculated again:

d (shr)= 1- (AA/AB)1.5

Where AA and AB represent the area of the circular piece after and before processing and staining. The sections were analyzed using a video microscopy system. In doing so, the microscopic fields were sampled using a systematic random sampling procedure. Then, the stereological test grids (point grid and unbiased counting frame) were superimposed on the microscopic images on a monitor using the stereology software designed at the University (Figure 1)

3- at the end of the introduction the necessity of Investigation the heat in mixed of wifi is not described.

The necessity of Investigation the heat in mixed wifi was corrected.

“For this purpose, we evaluated and compared the effects of heat, Wi-Fi radiation, and Wi-Fi-heat exposure on the cardiovascular system. “

4- exposure situation to heat and Wifi is not clear. 5- this method must be described in detail.

The exposure situation was corrected, and it was described in total detail.

“In this study, we opted for a rat model consisting of 32 male Sprague-Dawley rats weighing 210-240 g. All animal procedures were performed under the standard rules established by the Animal Care and Ethics Committee of the University. The rats were first randomly divided into four groups: group I: rats were not exposed to heat or WIFI waves, group II: Rats exposed to Wi-Fi 2.45GHz for 2 h/day, 52 consecutive days, group III: Rats exposed to heat; in a water bath at 43°C for10 minutes/day, 52 consecutive days, group IV (heat+ Wi-Fi): Rats exposed to 2.45GHz for 2 h/day then were placed in a water bath at 43°C for10 minutes/day waves (14).”

5- based on the type of statistical test, the results and discussion are not valid.

The Statistical analysis was corrected.

“Statistical comparisons were made using ANOVA, Kruskal-Wallis, and Mann-Whitney U-test. Also, P<0.05 was considered to be statistically significant.”

Reviewer #2:

I thank you for the good comment and your idea. I corrected and explained all your comments.

1- The phrase animal study should be given in the title.

The title of the document was changed to **“The effects of exposure to heat subsequent Wi-Fi radiation (2.4GHZ) on the rat’s cardiovascular system”.**

2- The abstract should be written quantitatively and qualitatively approach.

The abstract was corrected.

3- The conclusion in the abstract section is general and has poor content so this section needs to be rewritten.

The conclusion in the abstract section was corrected.

4- How to write in the "Introduction" is acceptable. As a suggestion to the authors, in the early part of the introduction, please mention the statistics and information on the importance of exposure to Heat subsequent Wifi radiation in population-based or workplace, as well as the economic burden of effect should be reported.

The introduction was corrected.

5- The "Introduction" section needs to address the research gap and the importance of this study.

The introduction was corrected.

6- **Materials and Methods section is acceptable. Thanks for yours.**

7- The research strengths and limitations of the study should be clarified at the end of the “Discussion” section.x

The research strengths and limitations were described. “Understanding the types of risks of using power transmission devices in the workplace and how to deal with them and designing different solutions for the necessary preparations and maintaining the physical health of people due to injuries with different Wi-Fi frequencies are of the most important

things.”

8- Suggestions for future studies should be mentioned.

The suggestions were written, “It is suggested that to reduce the potential harms of different ages in the society, the necessary studies to reduce the environmental impacts when transmitting waves of different wavelengths should be scientifically carried out by the relevant centers.”

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Revision (2)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

Seyed Ehsan Samaei: Reviewer | **Revision** (2) 14 Apr 2022

All comments were established by the authors.

Ebrahim Taban: Associate Editor | **Revision** (2) 16 Apr 2022

Dear author
We have read your manuscript, The revisions that you made to the manuscript are very effective in addressing the remaining concerns. We decide to accept the manuscript for publication in Health scope. Please consider this letter notification of the formal acceptance of your manuscript. Thank you for your patience with the review process.

Ramazan Mirzaei: EIC | **Revision** (2) 18 Apr 2022

Dear Author

According to reviewer comments, Your article has been accepted for publication
Best Regards