<u>**Review comments**</u>

Title: **Medical students' perceptions towards digitization and artificial intelligence: A mixed methods study**

Thank you for the opportunity to review this manuscript. The aim of the study as reported in the manuscript was to explore attitudes of 2020 medical students' generation towards various aspects of eHealth technologies with the focus on AI using an exploratory sequential mixed method analysis. The paper is well written in terms of clarity of idea and the authors use of mixed-methods design was interesting. However, there are some issues to be addressed before recommending this paper for publication.

1. The fundamental issue that needs clarity is whether or not the study design was 'exploratory mixed methods design' or 'convergent parallel design.' As far as exploratory mixed methods design is concerned, the researcher begins with qualitative data and then collects quantitative information. Typically, in this design, the researcher presents the study in two phases, with the first phase involving qualitative data collection and the second phase involving quantitative data. In this regard, your study fits with the exploratory nature.

   In an exploratory sequential mixed-methods design, the researcher emphasizes the qualitative data (QUAL) more than the quantitative data (quan). This emphasis may reveal by presenting the overarching question as an open-ended question or discussing the qualitative results in more detail than the quantitative results. However, in this manuscript, I have not seen elements of these characteristics in the paper. As I have seen a complementary role of the qualitative and quantitative pieces is apparent instead of the qualitative piece informing the quantitative pieces. For example, the description of the study design says the following. Page 2, lines 90-92,

   'This was then integrated into the second study phase consisting of a nationally representative sample of the same sort of cohort.'

   This description shows the integration of the two phases instead of the preceding phase informing the next phase. From the explanation in the study design and the presentation of your results, it sounds to me as if the mixed-methods nature of this study fits more with the convergent parallel design. Please, give your readers more information that conveniences the exploratory nature.

2. Please, use male undergraduate students or undergraduate male students instead of 'male and undergraduate students' in the abstract or simply throughout the paper.
3. In the abstract, lines 23-27, I suggest to use the following expression or something like that.

Around 38% of the students felt ill-prepared and could not answer AI-related questions because digitization in medicine and AI are not a formal part of the medical curriculum.

4. Page 2, line 42, 'the computation of compounding factors,' I did not understand what it means. I suggest the authors to replace this with appropriate phrase.

5. The aim of the study was not stated clearly. For example, the first sentence should describe the general aim or the overall objective of the study in a more general term. However, the first sentence did not appear to serve this purpose. Also, the research questions are not clearly stated. It needs the careful wording of the study participants. Phrases like '2020 medical students' generation,' and 'their level on confidence,' are confusing for the readers. Also, the research questions lack describing the study setting. I suggest to re-write the aims and study questions more clearly.

6. On page 2, line 111, the phrase 'to affirm or dismiss,' does not make sense. Replace this phrase with a more appropriate phrase.

7. Page 3, lines 117-118, the statement has two issues.
'The items were then tested through a pilot study consisting of a 117 group of 4 pre- and clinical students, mediated by AG and JE'
First, why did you use only 4 students for pilot testing?
Second, what do 'AG' and 'JE' represent?

8. Page 3, line 132, it says, Convenience sampling was used.
I would ask, why did you use cconvenience sampling?

9. Page 4, table 1, the caption and the table content do not match. Revise either of them.

10. In the methods section, clearly describe the sampling procedure for the quantitative and qualitative study parts separately. Also describe the final study sample for both. I am suggesting this because the logic of quantitative sampling and qualitative sampling are different.

11. Page 12, line 389, the statement which says, 'The non-probabilistic sampling makes a generalization of the answers difficult,' is confusing. I suggest to re-write this sentence.

12. I suggest to remove the phrase 'so called,' that has been used in the conclusion section or any other section.

13. Page 13, lines 409-410, in the conclusion section, the statement which says,
'This study also found significant differences between those groups indicating differences in subgroups of students from the quantitative survey.'
This is a confusing statement. Re-write this sentence clearly.

14. I suggest the authors to include a short section including the implications of the study after the conclusions.

I think, the manuscript benefits from a minor language editing.
I hope these suggestions are of use to the authors.