Peer Review File

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Reviewer A

1. Colonoscopy Chapter:

- The discussion on polyp detection and differentiation appears skewed, omitting studies where significant Adenoma Detection Rate (ADR) increase is not evident. A balanced exploration of this area would provide a more comprehensive understanding.

Reply: Thank you for pointing this out. We have included further literature to balance the narrative regarding the ADR.

- The potential drawbacks of AI implementation are not considered. It would be beneficial to discuss challenges such as data privacy, adoption barriers, and potential misdiagnoses.

Reply: Thank you for your comment and we agree that this is a vital part of this paper. We felt however that the section looking deeper into potential drawbacks of AI implementation should come later in the manuscript, once other sections had been adequately covered. They are covered in the last section relating to the Middle East region.

- In light of the paper's focus on practicability, I recommend a comparison between real-time, off-line, and single image analysis. This would offer insights into the strengths and weaknesses of these methods.

Reply: Thank you for your feedback on this point. Considering this, we have added a section outlining that initial studies were done on single images and the needed progress that has been made to ensure real-world adoption is possible.

2. EGD Chapter:

- The chapter seems disproportionately focused on cancer detection and differentiation. Broadening this focus would enhance the chapter's relevance.

Reply: Thank you for your feedback on this. We have expanded the chapter, to include more information on pre-malignant lesions and H pylori.

- Given the manuscript's emphasis on application in the Middle East, it would be useful to cite local studies, if any. Also, discussing strategies to evaluate models from other countries could guide future research in this region.

Reply: Thank you for your comment and we agree that this is a vital part of this paper. However, literature is very limited in this field. The aim of this manuscript was to provide an overview of the current AI adoption in the Middle East region and challenges for future expansion.

3. EUS: The issue of cross-device applicability needs to be addressed.

Reply: Thank you . We have added. More information in this section

4. Costs:

- The authors need to distinguish between the computational resources required for model development and application.

Reply: Thank you. We have added more details to elaborate on this point.

- If privacy concerns are addressed, the feasibility of multiple institutions sharing central computing resources for all non-realtime and potentially realtime applications should be discussed.

Reply: Thank you. We have included this valuable point in the revised version

- Equipment Costs: The cost estimations are too broad. A more detailed breakdown is required, specifying the different applications. The mention of endoscopes needs clarification; they are only relevant if proprietary AI's, tied to specific endoscopes, are considered.

Reply: Thank you. We agree with the reviewer that this is an important point but the detailed breakdown of costs is beyond the scope of this manuscript. We have however expended the section of costs to cover this subject.

- Training Costs: A more in-depth explanation of why training can be costly is warranted. The manuscript mentions CADe/CADx applications, which essentially need operators to activate the system, understand the output, and review it critically.

Reply: Thank you. We have included this valuable point in the revised version

- Maintenance Costs: This section lacks specificity, especially concerning "other ongoing maintenance activities".

Reply: Thank you. We have provided more details on discussing the costs on adopting AI in Endoscopy

- Integration Costs: Details on any unique requirements to be met in the Middle East are missing. Also, it should be noted that while a standardized solution for AI and electronic health records integration would be beneficial, it isn't necessary for immediate workload relief or improving patient care, such as increasing ADR.

Reply: Thank you. We have elaborated more on this aspect in the revised version

5. Context Middle East:

- The Middle East specific part is too small and I find only a few statements (e.g., ll. 156 - 157)

Reply: Thank you. We have made the manuscript more relatable to the Middle East region.

- What are problems to use AI in the middle east (e.g., almost no models are trained on this population) and how can they be addressed (e.g., efforts to implement a database to test or even train models on the own population). I had hoped to see more of such statements as this would greatly increase the value (see the aim stated in the abstract; ll. 22-25)

Reply: Thank you. This is very helpful feedback. We have included this information to the manuscript.

Minor Comments:

Line 46: The abbreviation UAE needs to be introduced earlier in the text for clarity.

Reply: Thank you for pointing this out. We have now changed the text in the manuscript to reflect this.

2. Lines 48-51: The statements here lack supporting literature. The authors should either provide references or reconsider the claims made.

Reply: Thank you for your comment. We have now referenced these claims appropriately.

Reviewer B

1. We failed to find the citations of *Ref 6*, *Ref 32-34* in your text. please check and revise.

Response: *Thank you for pointing this out, we have corrected this.*

2. *Ref 10* and *Ref 14* are duplicates. Please check and revise.

> 10. Repici A, Badalamenti M, Maselli R, et al. Efficacy of Real-Time Computer-Aided Detection of Colorectal Neoplasia in a Randomized Trial. Gastroenterology. 2020;159(2):512-520.e7. doi:10.1053/j.gastro.2020.04.062
>
> 14. Repici A, Badalamenti M, Maselli R, et al. Efficacy of Real-Time Computer-Aided Detection of Colorectal Neoplasia in a Randomized Trial. Gastroenterology. 2020;159(2):512-520.e7. doi:10.1053/j.gastro.2020.04.062

Response: *Thank you, the duplicate reference has been removed and references updated appropriately.*