Peer Review File

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Reviewer A

Comment 1: How does the newly developed framework integrate into existing frameworks (Sundar, etc.) that may be used in Health communication or social presence research?

Reply 1: Thanks for raising an important point here. Our conceptual design can adopt different existing frameworks/theories from health communication or social presence including theoretical foundations in health communication, social presence and relational dynamics, and trust and credibility. We have updated the Discussion section addressing your point where we explained how existing theories can be integrated in our conceptual design.

Changes in the text: We added text accordingly in the Discussion section (see Page 15, line 597).

Comment 2: Provide a very nice introduction to mHealth Ras and the potential benefits and uses in the context of health.

Reply 2: Thank you for the compliment and we sincerely appreciate your positive feedback.

Changes in the text: Not Applicable

Comment 3: Authors present several benefits of Ras in the intro. Are there any negative outcomes or unanticipated outcomes from Ras documented in the literature that would be relevant here?

Reply 3: Thank you for the query. We have, accordingly, updated the Introduction by adding potential negative or unanticipated outcomes of utilizing RAs in healthcare available in literature to emphasize this point. We have mentioned the negative outcomes after the potential positive and beneficial outcomes of RAs in Introduction.

Changes in the text: We have added a full paragraph explaining negative or unanticipated outcomes of RAs in healthcare available in literature to address this comment (see Page 04, line 100).

Comment 4: I enjoyed reading the explanation of distinguishing features between RA and CA.

Reply 4: Again, thank you for the compliment and we sincerely appreciate your positive feedback.

Changes in the text: Not Applicable.

Comment 5: What is the data and personalization controller? This term is used a few times before it is explained in detail in section 3.2.6 (line 508 and beyond)

Reply 5: Thank you for pointing this out. We agree with this comment. We have updated the article by moving the explanation of Data and Personalization Controller before the section 3.2.4 Data Analysis Stage

Changes in the text: We moved the section 3.2.6 Data and Personalization Controller after the section 3.2.2 Input Processing Stage (see Page 11, line 385). The updated section serial is now 3.2.3.

Comment 6: Is there a schedule for updating the data for the Reaction controller?

Reply 6: Thank you for this question. As we proposed a conceptual design, we did not define the schedule for updating the data for the Reaction Controller. Placing a scheduler can solve the issue. However, scheduling must be successive and error-free, and data updating must be continuous. Due to the various development processes and programming methodologies used for relational agent functionalities, the scheduling should be time interval-based but may vary. To fix the scheduling time interval, the designers can create a design requirement, and the developers can adhere to it.

Changes in the text: We have added some text explaining the scheduling process to address this comment (see Page 11, line 407).

Comment 7: Overall, the discussion covers the general findings, however, may be improved by a more robust discussion of the existing use of conceptual design and workflow for RAs. While the review of the existing literature with Ras is systematic and well-reviewed, given the proposed conceptual design, including previously used

frameworks, workflows or other similar type user-centered development strategies would help contextualize the findings and the role of the proposed conceptual design model within the existing literature.

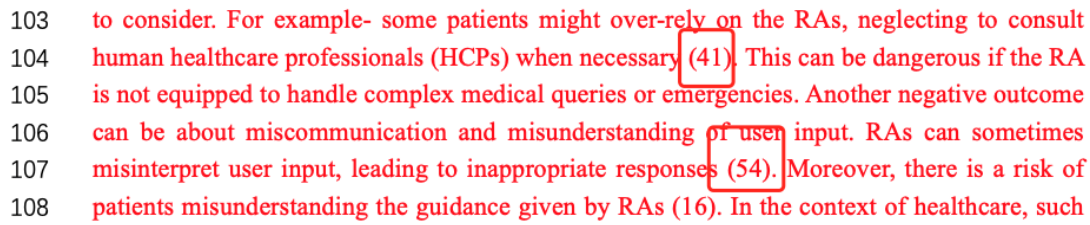
Reply 7: Thank you for this concern and we agree with this and have incorporated your suggestion throughout the Discussion section in our manuscript.

Changes in the text: We have added and updated the Discussion section accordingly (see Page 14, lines 541-570, 597-631, 648-651).

Reviewer B

1. Abstract should be within 200-350 words. Please shorten your Abstract.
Response: Updated on the revised manuscript file. Abstract size is now 341 words.

2. References should be cited **consecutively** in text. For example, you should cite Ref.41 between Ref.40 and Ref.42. Please check through your whole text and revise.


103 to consider. For example- some patients might over-rely on the RAs, neglecting to consult
104 human healthcare professionals (HCPs) when necessary (41). This can be dangerous if the RA
105 is not equipped to handle complex medical queries or emergencies. Another negative outcome
106 can be about miscommunication and misunderstanding of user input. RAs can sometimes
107 misinterpret user input, leading to inappropriate responses (54). Moreover, there is a risk of
108 patients misunderstanding the guidance given by RAs (16). In the context of healthcare, such

Response: Updated accordingly on the revised manuscript file.