Review of: "Applying User-Centered Design Methods to Improve The Experience of the NHS APP"

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The authors have tackled a very interesting project with key implications for the NHS and user uptake of the NHS app.

Examining other studies on the NHS app would be useful. I found a few articles that explore adoption of the NHS app and link to the study on how uptake could be improved.

1. Dowthwaite, L., Fischer, J., Perez Vallejos, E., Portillo, V., Nichele, E., Goulden, M., and McAuley, D., 2021. Public adoption of and trust in the NHS COVID-19 contact tracing app in the United Kingdom: quantitative online survey study. *Journal of Medical Internet Research*, *23*(9), p.e29085.

2. Sukriti, K.C., Tewolde, S., Laverty, A.A., Costelloe, C., Papoutsi, C., Reidy, C., Gudgin, B., Shenton, C., Majeed, A., Powell, J., and Greaves, F., 2023. Uptake and adoption of the NHS App in England: an observational study. *British Journal of General Practice*, *73*(737), pp.e932-e940.

3. Tewolde, S., Costelloe, C., Powell, J., Papoutsi, C., Reidy, C., Gudgin, B., Shenton, C., and Greaves, F., 2022. An observational study of uptake and adoption of the NHS App in England. *medRxiv*, pp.2022-03.

The paper clearly presents the aims of the study and provides a coherent methodology for addressing the questions.

The paper does integrate a few tangential ideas into the subject matter, which is essentially about "Applying User-Centered Design Methods to Improve the Experience of the NHS App." In some areas, these ideas detract from the main argument and thus make the paper difficult to follow.

The aim is about the reasons for the low adoption rate, but the discussion of findings and implications for practice does not address low adoption. The discussion of findings restates the findings without critical discussion about how the problems and challenges faced by the participants can be rectified and about the value of UCD to the NHS and perhaps to telemedicine generally. The implications for practice make a massive link to air pollution. Though this is valid, it is only tangentially linked to this paper. The implications from the research undertaken link to how UCD can improve the experience of NHS users, support health and social care practitioners, and in the long term, also support society. I assume the air pollution angle is linked to decreased visits to GPs and other appointments which could be replaced by the use of the NHS app. This could be made clear in the paper.

The authors could strengthen the paper by enhancing the message to the target audience and ensuring this is consistent.

What are the key research questions? These are interspaced in the paper and not very clearly developed. They currently appear mid-paper.

The authors recognise that the 15 participants are statistically a small sample. They should also acknowledge that this is a key limitation in making generalisations. The 15 participants and the research do provide a useful pilot for why the NHS app needs to be updated and why UCD should be used.

Finally, take care to ensure clarity and carefully proofread for those typos and mistakes we all make.

For example, in the results section, the following paragraph is confusing.

"This theme discusses the user's pain points while using the NHS app, which corresponds to the first research objective. To create a user-friendly app, the author conducted interviews to learn more about the users, their goals, and their frustrations while using the app (Strömberg et al. 2005)."

Which author? The authors of this paper, or is this referencing literature?

This is an important paper, and the authors have bravely tackled a very important topic. Best wishes with the final edits.