## PEER REVIEW HISTORY



## ARTICLE DETAILS

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| **TITLE (PROVISIONAL)** | Patient Experiences of Co-Designed Rehabilitation Interventions: Protocol for a Rapid Review |
| **AUTHORS** | McKercher, Jonathan; Slade, Susan C.; Jazayeri, Jalal; Hodge, Anita; Knight, Matthew; Green, Janet; Woods, Jeffrey; Morris, Meg |

## VERSION 1 – REVIEW

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| **REVIEWER** | Kate Laver<br>Flinders University |
| **REVIEW RETURNED** | 25-Oct-2021 |

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| **GENERAL COMMENTS** | This protocol for a rapid review addresses an important topic. It is registered with prospero.<br>I suggest the team add more detail regarding their inclusion criteria. What study designs will be included? It mentions RCTs but is it likely that RCTs will be included given the study question? How is co-design defined? What are the 'rehabilitation' settings? Does this include rehabilitation for addiction or substance abuse? for vocational rehabilitation? Furthermore, given that the data addressing this question will likely be very varied (survey responses, interviews) it would be good to include more specificity around presentation of the data. |

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| **REVIEWER** | Hussain Aljaroodi<br>The Institute of Public Administration, Information Technology |
| **REVIEW RETURNED** | 27-Oct-2021 |

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| **GENERAL COMMENTS** | Review of Patient Experiences of Co-Designed Rehabilitation Interventions: Protocol for a Rapid Review<br><br>While I understand the importance of a rapid review of users experience in co-design, I think the manuscript failed to provide a comprehensive coverage of literature that already published in this area.<br><br>There is a more comprehensive review that is already published in this area concerning mobile health (mHealth). Noorbergen, T. J., Adam, M. T., Roxburgh, M., & Teubner, T. (2021). Co-design in mHealth Systems Development: Insights From a Systematic Literature Review. AIS Transactions on Human-Computer Interaction, 13(2), 175-205. The authors should justify the motivation of such protocol. the mentioned paper, the authors discussed findings on the experiences of various stakeholders, including the users/patients in the co-design process.<br><br>The authors disused tailoring the co-design app to users' needs and requirement, and I am surprised that such co-design paper was |

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| | ignored. Empathic avatars in stroke rehabilitation: A co-designed mHealth artifact for stroke survivors and Javor, A., Ransmayr, G., Struhal, W., Riedl, R.: Parkinson patients' initial trust in avatars: theory and evidence. PLoS ONE 11, 1–21 (2016). I know that these papers may not be available in the selected databases, but a general search should be used for the introduction.<br><br>The definition of co-design is not accurate. co-design does not only include healthcarer and users, but include various stakeholders in the process. this should be clarified in the introduction of the manuscript.<br><br>The inclusion and exclusion criteria need more detail, specially some justifications why the authors excluded conferences. I think including conferences would benefit this review as they are similar to rapid review in nature. Also, while I understand the this a health perspective review, the authors should include some information systems (IS) databases in their search. As Design Science Research (DSR) approach is extensively used in IS research and there are many papers publish in IS outlets. I would suggest to include top journal from Association for Information Systems (AIS).<br><br>Minor issues:<br>- Abbreviations: the authors used GRADE through the paper, but the proper definition of this term was introduced on page 12. The authors should abbreviate this and other terms properly in the first instant. this holds for other abbreviations used in the manuscript. |

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| **REVIEWER** | Bernd Löwe<br>University Medical Center, HamburgEppendorf, Psychosomatic Medicine and Psychotherapy |
| **REVIEW RETURNED** | 31-Oct-2021 |

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| **GENERAL COMMENTS** | This is a protocol of a rapid review that aims to explore patient experiences of co-designed rehabilitation interventions and inform rehabilitation decision-making. The review was registered in PROSPERO (CRD42021264547) in August 2021. In the methods section of the article, the rapid review method is adequately explained. It is positive that the report of the results should be done according to the PRISMA guidelines. Another strength is that the study protocol has been co-designed and co-authored with two consumer representatives. The methodology of the review is clearly described. However, there remain a few ambiguities that should be addressed by the authors in the context of a revision:<br><br>The authors write in the abstract that they want to search electronic databases from 1 January 2020 to 31 July 2021. It remains unclear here whether this date refers to the publication dates of the included journal articles or the actual date of the search conducted by the authors (which is specified in the PROSPERO registration as August to December 2021). This date should be made more precise in the abstract.<br><br>Unfortunately, the dates given for the search in the abstract (page 2) and in the methods section (page 6) do not match. This should be corrected in accordance with the PROSPERO registration of the protocol.<br><br>In the abstract, the authors write that the "review findings will be |

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| | rapidly translated to consumers, clinicians, healthcare leaders, organisations, researchers and policy makers via publications, evidence summaries, conferences, workshops, websites, social media, and online events." A practically identical sentence can be found in the manuscript on page 10. Unfortunately, it remains unclear exactly how this rapid transfer is to take place. This should be described more precisely, as in my view it is not enough to expect that this transfer can be achieved through publication alone. |

**VERSION 1 – AUTHOR RESPONSE**

| | **Reviewer 1** | **Page & Line**<br><br>**Revised Manuscript** |
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| Comment | *This protocol for a rapid review addresses an important topic. It is registered with PROSPERO.*<br><br>*I suggest the team add more detail regarding their inclusion criteria.*<br><br>*What study designs will be included? What are the 'rehabilitation' settings? Does this include rehabilitation for addiction or substance abuse? for vocational rehabilitation? It mentions RCTs but is it likely that RCTs will be included given the study question?*<br><br>*How is co-design defined?*<br><br>*Furthermore, given that the data addressing this question will likely be very varied (survey responses, interviews) it would be good to include more specificity around presentation of the data.* | |
| Response | We agree and have added more details to the inclusion / exclusion criteria as follows:<br><br>Studies are to be included when they meet the following criteria: inclusion of participants who are adults older than 18 years; conducted in a physical rehabilitation setting, such as neurorehabilitation, musculoskeletal rehabilitation or cardiorespiratory rehabilitation, acute, sub-acute or slow stream rehabilitation; include rehabilitation interventions that are co-designed with patients; report patient experiences of co-designed rehabilitation interventions; inpatient hospital settings; empirical study design reported in English. Any empirical study design will be included, such as randomised controlled clinical trials (RCT), non-randomised trials, cohort studies, pilot studies, feasibility analyses, single case designs, surveys and qualitative investigations. | Page 7, lines 4-12 |

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| | Publications will be excluded if they pertain to drug, alcohol, vocational or psychiatric rehabilitation; relate to rehabilitation in the home or outpatient settings; are solely digital or mHealth interventions; are protocols, book chapters, theses, editorials, conference abstracts; are solely on paediatric or maternity participants; or if they are on patient groups that require a third party to participate in the co-design process (e.g., individuals with severe cognitive impairment, dementia or delirium or those in intensive care).<br><br>The definition of co-design has now been included in the introduction as: *"*Rehabilitation interventions are considered to be co-designed if a patient has participated in rehabilitation planning, design, or delivery, including the re-design of interventions to meet individual needs and preferences"<br><br>We agree with the reviewer about presentation of the data and in the Methods section have provided more specificity regarding the presentation of survey and qualitative data:<br><br>Summary tables will document key elements for each investigation, such as the setting, co-design strategy, co-designed interventions and evaluation. The Cochrane Risk of Bias tool will be used to appraise the method quality for the RCTs.[25] For the non-randomised trials, checklists from The Joanna Briggs Institute (JBI) critical appraisal tools will be completed to assess method quality and the risk of bias, matched to different quantitative or qualitative designs.[26,27] This includes for survey and interview data, which will be summarised, tabulated and analysed for themes. | Page 7, lines 14-19<br><br>Page 4, Lines 10-13<br><br>Page 8, lines 21-25<br>Page 9, lines 1-2 |
| **Reviewer 2** | | |
| Comment | *While I understand the importance of a rapid review of users experience in co-design, I think the manuscript failed to provide a comprehensive coverage of literature that already published in this area.*<br><br>*There is a more comprehensive review that is already published in this area concerning mobile health (mHealth). Noorbergen, T. J., Adam, M. T., Roxburgh, M., & Teubner, T. (2021). Co-design in mHealth Systems Development: Insights From a Systematic Literature Review. AIS* | |

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| | *Transactions on Human-Computer Interaction, 13(2), 175-205. The authors should justify the motivation of such protocol. the mentioned paper, the authors discussed findings on the experiences of various stakeholders, including the users/patients in the co-design process.*<br><br>*The authors disused tailoring the co-design app to users' needs and requirement, and I am surprised that such co-design paper was ignored. Empathic avatars in stroke rehabilitation: A co-designed mHealth artifact for stroke survivors and Javor, A., Ransmayr, G., Struhal, W., Riedl, R.: Parkinson patients' initial trust in avatars: theory and evidence. PLoS ONE 11, 1–21 (2016). I know that these papers may not be available in the selected databases, but a general search should be used for the introduction.* | |
| Response | Thank you for the excellent references. We have incorporated these into the revised introduction to provide a better overview of the research in this area. We have added:<br><br>A new area of research has been the use of co-design of mobile health (mHealth) interventions, also known as digital health.[15] For example, one trial showed that a co-designed mHealth system supported stroke rehabilitation by improving communication of health advice and patient engagement.[16] A systematic literature review by Noorbergen, Adam, Roxburgh, Teubner [15] showed that co-designed strategies were of benefit to some rehabilitation patients. There was a heavy focus on early co-design and a paucity of research on the post-design phase.[15] A focus on post-design implementation may elucidate how users experience the product, service, or therapy environment.[17] | Page 5, lines 5-13 |
| Comment | The definition of co-design is not accurate. co-design does not only include healthcarer and users, but include various stakeholders in the process. this should be clarified in the introduction of the manuscript. | |
| Response | We agree with this point and have updated the introduction with an improved definition of co-design:<br><br>Co-design refers to collaboration between stakeholders such as patients, healthcare professionals, carers, or families to design and implement therapies and services in partnership.[5] Rehabilitation interventions are considered to be co-designed if a patient has participated in rehabilitation planning, design, or delivery, including the re-design of interventions to meet individual needs and preferences. | Page 4, Lines 8-13 |

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| Comment | *The inclusion and exclusion criteria need more detail, specially some justifications why the authors excluded conferences. I think including conferences would benefit this review as they are similar to rapid review in nature. Also, while I understand the this a health perspective review, the authors should include some information systems (IS) databases in their search. As Design Science Research (DSR) approach is extensively used in IS research and there are many papers publish in IS outlets. I would suggest include top journal from Association for Information Systems (AIS).* | |
| Response | We agree that conference papers would benefit our review provided that they are accompanied by a paper that we can analyse. We have updated our inclusion and exclusion criteria to make it clear that conferences will be included (except abstract only papers):<br><br>"Studies are to be included when they meet the following criteria: published papers in journals or conference proceedings …"<br><br>We have respectfully decided against extending this rapid review to DSR and additional information systems research as we believe this would extend the review too broadly. | Page 7, lines 4-5 |
| Comment | *Minor issues:*<br>*- Abbreviations: the authors used GRADE through the paper, but the proper definition of this term was introduced on page 12. The authors should abbreviate this and other terms properly in the first instant. this holds for other abbreviations used in the manuscript.* | |
| Response | Thank you, we have fixed this issue regarding abbreviations and fully defined GRADE on page 10. | Page 10, lines 22-23 |
| **Reviewer 3** | | |
| Comment | The authors write in the abstract that they want to search electronic databases from 1 January 2020 to 31 July 2021. It remains unclear here whether this date refers to the publication dates of the included journal articles or the actual date of the search conducted by the authors (which is specified in the PROSPERO registration as August to December 2021). This date should be made more precise in the abstract. | |
| Response | We agree and have updated the abstract to make it clear that the search refers to the publication dates: "Four electronic databases, including Cochrane CENTRAL, MEDLINE, Embase, and CINAHL, will be searched for papers published from 1 January 2000 to 1 January 2022." Similarly, PROSPERO registration has been amended to specify 1 January 2000 to 1 January 2022. | Page 2, lines 10-12 |

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| Comment | Unfortunately, the dates given for the search in the abstract (page 2) and in the methods section (page 6) do not match. This should be corrected in accordance with the PROSPERO registration of the protocol. | |
| Response | We have updated both the abstract and the methods to match with the correct search dates according to our search strategy: “Four online databases (Cochrane CENTRAL, MEDLINE, Embase, and CINAHL) will be searched, with the search being restricted to those papers published from 1 January 2000 to 1 January 2022.” Accordingly, our PROSPERO registration has been amended with the correct dates above. | Page 2, lines 10-12<br><br>Page 7, lines 23-24 |
| Comment | In the abstract, the authors write that the "review findings will be rapidly translated to consumers, clinicians, healthcare leaders, organisations, researchers and policy makers via publications, evidence summaries, conferences, workshops, websites, social media, and online events." A practically identical sentence can be found in the manuscript on page 10. Unfortunately, it remains unclear exactly how this rapid transfer is to take place. This should be described more precisely, as in my view it is not enough to expect that this transfer can be achieved through publication alone. | |
| Response | Thank you, the manuscript has been revised to precisely describe how the transfer will occur. We have edited the Discussion section of the manuscript to clarify:<br><br>The evidence will be rapidly translated to the research community, policy makers, consumers, health professionals and healthcare organisations using a range of implementation science methods.[37, 38] We shall hold a series of consumer workshops on line and face-to-face, to share the results with end users. A series of digital health seminars will be conducted on the results using the Academic and Research Collaborative in Health (ARCH) online platform. The findings will also be presented at workshops and conferences and disseminated to health professionals at in professional development seminars. An evidence summary will be posted online via social media, and on websites, to ensure that the findings have wide reach. | Page 11, lines 23-26<br>Page 12, lines 1-6 |