

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Feasibility of the Perceive, Recall, Plan and Perform System of intervention for persons with brain injury in community-based rehabilitation: A pilot for a multiple-baseline design study
AUTHORS	Lindstad, Marte; Obstfelder, Aud; Sveen, Unni; Stigen, Linda

VERSION 1 – REVIEW

REVIEWER	Watter, Kerrin Princess Alexandra Hospital Health Service District, ABI TRS
REVIEW RETURNED	21-Sep-2022

GENERAL COMMENTS	<p>I am pleased to see the results of this program of research being presented. I commend your team on undertaking this intervention study under real-life clinical conditions for adults with acquired brain injury. To plan and effectively implement such a project takes a large amount of work, coordination, collaboration, time and energy. You have undertaken a very valuable study, which will appeal to both clinicians and researchers. I hope this paper encourages other clinician-research partnerships to develop and instigate more real-world clinical intervention studies.</p> <p>However, there is a range of information not presented (particularly around methodology) that is impacting the current quality and specificity of this manuscript. And while I note the protocol the paper is based on is 'in process', providing additional methodological information in this manuscript will strengthen your paper. In my comments on the methods section below, I have some questions and a number of suggestions to make the presentation of the information clearer to the reader, and better detail the processes you undertook, which will strengthen this manuscript and presentation of the results of this important study.</p> <p>Introduction The introduction, aims and objectives were clear, and I easily understood the purpose of your study.</p> <p>Method The initial detail of your methods section is clear and concise, as is your information on the research setting and participants. In methods, paragraph 2, you state a criteria of identifying 'acceptability'. Please define this term (acceptability) and how it has been applied / interpreted in the context of your study.</p>
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	<p>Patient / public involvement The clinical / community rehabilitation nature of this study is apparent, demonstrating the impact of your planning, and this is commended. You also state you consulted with a stroke survivor organization, but do not report how this consultation impacted upon the study design or study roll out. Your manuscript would be strengthened by a statement reporting the outcome of this consultation and the impact on the study design or implementation.</p> <p>Research setting Please include information on the OTs who collected the data for the study (e.g., number of OTs involved, years clinical experience).</p> <p>Intervention to be studied 2 You report that in addition to the PRPP intervention and usual team-based rehab, the OT supervised relatives and the team to provide prompts and cues, and that this was a step in the research procedure. I can see the additional therapy / rehab is reported in your manuscript (in table 2), but do not see the report / outcome regarding the amount of 'other' prompting that the clients received. Please include this in your manuscript. However, if this did not occur or was unable to be measured and reported, this should be stated.</p> <p>Target behaviour This is well detailed; however from your description, I expected to see each of the 5 behaviours targeted plotted separately for each client. More information needs to be provided here about how you arrived at one visual representation (graph) of target performance for each client from the 5 target behaviours. Also, after reading the discussion, I am still unclear as to the format of an intervention session for each client, including which of the functional tasks were targeted in each session (e.g., only 1 of 5 behaviours, all 5); whether the behaviours were worked on sequentially or concurrently (or other?). Information on this specificity of the intervention you provided is required to aid the reader, and will strengthen this paper (plus aid replication of the study by others). Perhaps this information is inherent to OTs familiar with PRPP, but other clinician readers will struggle to understand your treatment in detail. Information on the frequency of measurement / data collection for the behaviours (for the multiple baseline design) is missing; as is information on who undertook this measurement. The generalisation measure of the Barthel index is appropriate, however I do not understand how the GAS goal is a generalisation measure. What goals were set? Were these related to the 5 behaviours / functional tasks that they were receiving PRPP interventions for? These need to be</p>
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	<p>explicitly stated and reported for each client; and the GAS scores reported on at the three timepoints for each client.</p> <p>In the final paragraph, you report collecting qualitative statements from clients, use of journals etc – however you do not specify the procedure for this at this point in the paper, and need to provide more detail on the process at this point. I do see some other detail on this has been provided in the procedural fidelity section when detailing acceptability(eg collected by OTs), however information needs to be provided earlier, or better linked. The methodology for your qualitative research component needs to be much more explicit and clear, and given how detailed you are regarding the quantitative measures in the previous section, the difference between these is noticeable. This is also commented on below.</p> <p>Procedural fidelity</p> <p>For the checklist of the procedure, please report here who collected this data (e.g., OTs vs researchers); and whether this was self rated or independently rated or verified by another?</p> <p>Your manuscript will benefit from some additional detail on your research processes for assessment of acceptability of the intervention (see my previous comment on definitions also). This includes</p> <p>3</p> <p>providing information on how the data was captured by the researchers (e.g., verbatim, recorded then transcribed, notes made during the meeting / dialogue); process and method of analysing this data and the research rigour around this. As this seems to be the qualitative component of your study, much more specificity and detailed methods are required. Also, what was your determination / measure of “acceptability” and how does this relate to the qualitative data being captured? Please include.</p> <p>Blind rating and interrater reliability</p> <p>I am unclear about the outcome of your planned blinded rating and interrater reliability rating. Was interrater reliability planned but not undertaken? Did it occur for less sessions than planned? Or did you need to use a different measure all together (i.e., independent non-blinded assessment by other OT of measures)? Please detail the outcomes of this – i.e., interrater reliability rating you received and number of sessions that were rated for this (IRR %); plus your % rating for the non-blinded independent assessment. This is important data to report. I note you discuss missing data in the discussion, but you need to report the actual %s in your results as well as amount of missing data.</p> <p>Also, you have not specified which 20% of sessions were rated (or planned to be rated) – e.g., whether these were randomly allocated sessions, or whether set sessions were chosen for rating (e.g., every 5th session). Adding this detail will strengthen the paper.</p>
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	<p>Data Analysis and Results</p> <p>This section requires some work to make it more explicit to the reader exactly what data was analysed, plotted and then represented in the paper.</p> <p>Primary outcome measure: PRPP stage 1 percentage mastery.</p> <p>You state you graphed all five tasks for each participant – from this, the reader infers that you plotted their outcomes on five different tasks, however in the results graph a summary score is presented. Please provide additional detail on:</p> <ul style="list-style-type: none"> - the rationale for not graphing each task for your results – there is some mention of this in the discussion, but additional information may need to be provided earlier - how the summary measure (presented in the graph) was obtained from the 5 tasks assessed? Was this an average or mean score of the combined % of mastery across the 5 tasks at each data collection point? In 'Effectiveness of intervention' section you detail collapsing mean and median scores – this section is unclear and the methodology needs further detail / explanation. - the frequency of data capture for the MBD design, how this relates to the number of sessions in the intervention (e.g., Anne – 9 sessions Carl – 30 sessions), and how this relates to the graphed data – not every session is plotted. How was this determined? - how the intervention as provided: Were all 5 goals addressed within each intervention session? If not, were they worked on evenly across the program (e.g., all goals received the same amount of intervention time?) Reporting this will help the reader understand your intervention and its reporting. <p>Clinical significance</p> <p>4</p> <p>If you are keen to use the term 'significant' in relation to clinical change, please provide a definition of how you determined 'significance' (as opposed to 'clinical improvements' or 'clinical change'). The term 'significance' may be misconstrued (within a statistical sense) which is not your intent – so providing a definition on this will aid the reader.</p> <p>Could you provide some additional detail as to Carl's intervention and what 'post-intervention 1' and 'post-intervention 2' mean, in relation to treatment. I understand he had a prolonged intervention period compared with the other clients but struggled to comprehend the difference in the intervention(s) being provided across the intervention phase (i.e., intervention vs post-intervention 1 vs post-intervention 2).</p> <p>You report GAS improvements but have not stated the GAS goals or reported their scoring. Please include in your manuscript.</p> <p>In your methods you report having the Barthel and GAS as measures of 'generalisability' of your intervention. Consider using similar wording / making this more explicit when you report these results here.</p>
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	<p>I cannot find where you reported your secondary outcome measures (PRPP stage 2). Does this link to the data you present in figure 3? Providing text around this figure and these findings is needed to assist the reader to understand the outcomes / results for this section.</p> <p>Discussion</p> <p>The stated strengths of your study, and your arguments for providing rehabilitation and this intervention to this client cohort are well made. You highlight the limitations of the study effectively. Your discussion of how you measured and presented / graphed your study data (e.g., repeated measures vs measures across tasks) – there needs to be clearer explanation earlier in your manuscript of what you treated and measured (e.g., in methods and results), to aid the reader to interpret your intervention and data. Even now, I am unclear as to what an intervention session looked like for each client, including which of the functional tasks were targeted in each session (e.g., only 1 of 5 activities / goals, all 5), and whether they were worked on sequentially (e.g., working on putting on deodorant for a few sessions or until mastery, then working on brushing hair) or worked on concurrently.</p> <p>Final comments</p> <p>It has been a pleasure to see the outcomes of your study presented, and I commend you again on undertaking a complex intervention study in the “real world” of clinical practice, with all its inherent demands and complexities. The majority of my comments are on additional presentation and clarification of your processes / methodology and data – this will support and strength this excellent clinical paper.</p>
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REVIEWER	Gilroy, John University of Sydney, Faculty of Health Sciences
REVIEW RETURNED	24-Oct-2022

GENERAL COMMENTS	They only had three participants. This number does not suffice their aims nor support thier conclusions.
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REVIEWER	Nott, Melissa Charles Sturt University, Community Health
REVIEW RETURNED	12-Nov-2022

GENERAL COMMENTS	<p>This pilot study evaluates the fidelity of PRPP Intervention with older people who have an ABI. The stated aim is to prepre for a larger planned intervention. This is an important first step in the author's research before undertaking the planned larger study. My primary concern with the manuscript is the lack of detail in the methods and reporting of findings as outlined below. Comments also included on the manuscript.</p> <p>Is is difficult to fully evaluate the appropriateness of the methods, which refer to an unpublished protocol (reference 21). Insufficient detail contained within this publication. Inclusion of the fidelity checklist as supplementary material would also be useful.</p>
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	<p>Results are not provided in full. Basic values of GAS and BI not provided. Statistical analysis of GAS and Barthel change should be included. Greater interpretation of PRPP graphs required. Inclusion of checklist required as it is not possible to determine if all threats to fidelity were considered.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Kerrin Watter, Princess Alexandra Hospital Health Service District Comments to the Author:
 Dear authors, I commend you for this real-world intervention study. Please see the attached file with my comments provided as a pdf.

*This reviewer's comments are attached as a separate document ("Review 0922.pdf")

Response: Here converted to Word document and copy – pasted below:

I am pleased to see the results of this program of research being presented. I commend your team on undertaking this intervention study under real-life clinical conditions for adults with acquired brain injury. To plan and effectively implement such a project takes a large amount of work, coordination, collaboration, time and energy. You have undertaken a very valuable study, which will appeal to both clinicians and researchers. I hope this paper encourages other clinician-research partnerships to develop and instigate more real-world clinical intervention studies.

However, there is a range of information not presented (particularly around methodology) that is impacting the current quality and specificity of this manuscript. And while I note the protocol the paper is based on is 'in process', providing additional methodological information in this manuscript will strengthen your paper. In my comments on the methods section below, I have some questions and a number of suggestions to make the presentation of the information clearer to the reader, and better detail the processes you undertook, which will strengthen this manuscript and presentation of the results of this important study.

Response: Thank you for encouraging words and comments that we believe will strengthen our paper. The protocol paper has now been published and will be added as a supplementary file. We will refer to parts of the protocol where this clarifies the deficient methodological information the reviewers require.

Lindstad, M. Ø., A. U. Obstfelder, U. Sveen and L. Stigen. Effectiveness of the Perceive, Recall, Plan and Perform intervention for persons with brain injury in community-based rehabilitation: protocol for a single-case experimental design with multiple baselines. *BMJ open* 2022 Vol. 12 Issue 10 Pages e060206.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9535175/pdf/bmjopen-2021-060206.pdf>

Introduction

The introduction, aims and objectives were clear, and I easily understood the purpose of your study.

Method

The initial detail of your methods section is clear and concise, as is your information on the research setting and participants.

In methods, paragraph 2, you state a criteria of identifying 'acceptability'. Please define this term (acceptability) and how it has been applied / interpreted in the context of your study.

Response: The understanding of the term acceptability comes from reading 'The framework for developing and evaluating complex interventions' (Skivington et al, 2021). The Consort 2010 statement extension to randomized pilot and feasibility trials (2016) has also been checked but gave no further definition. Based on the examples from Skivington et al. (2021a) and the checklist for developing and evaluating complex interventions (Skivington et al. 2021b), our understanding of the term is mainly the acceptability of the intervention and the research procedures for the participants and providers. This is i.e., regarding extra time consumed and use of resources when doing intervention and data collection, discomfort, intervention in line with the rehabilitation goals, and possible in the existing context. This is proposed by Skivington et al. (2021b) to be explored by qualitative information from participants and the providing occupational therapists. Clarifications are added under paragraph 2 under first criteria: 'acceptable regarding time consumed, comfort, respecting the rehabilitation goals and the context'.

Eldridge, S. M., C. L. Chan, M. J. Campbell, C. M. Bond, S. Hopewell, L. Thabane, et al. CONSORT 2010 statement: extension to randomised pilot and feasibility trials. *bmj* 2016 Vol. 355

Skivington, K., L. Matthews, S. A. Simpson, P. Craig, J. Baird, J. M. Blazeby, et al.. A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *bmj* 2021a Vol. 374

Skivington, K., L. Matthews, S. A. Simpson, P. Craig, J. Baird, J. M. Blazeby, et al. Framework for the development and evaluation of complex interventions: gap analysis, workshop and consultation-informed update. *Health Technol Assess* 2021b Vol. 25 Issue 57 Pages 1-132
Patient / public involvement

The clinical / community rehabilitation nature of this study is apparent, demonstrating the impact of your planning, and this is commended.

You also state you consulted with a stroke survivor organization, but do not report how this consultation impacted upon the study design or study roll out. Your manuscript would be strengthened by a statement reporting the outcome of this consultation and the impact on the study design or implementation.

Response: The consultation with a stroke survivor organization did not result in any change. They supported to make an intervention study concerning cognitive challenges and confirmed the planned study as important. Added under chapter 'Patient and public involvement': 'during which they confirmed the importance of focusing on cognitive rehabilitation and everyday tasks and had no further comments.' We also removed parts of a sentence to save space and because they had the same meaning.

Research setting

Please include information on the OTs who collected the data for the study (e.g., number of OTs involved, years clinical experience).

Response: Added: (n=4) and 'all female with a range of 9-16 years of clinical experience' and some details about their PRPP experience as reviewer 3 asked for.

Intervention to be studied

You report that in addition to the PRPP intervention and usual team-based rehab, the OT supervised relatives and the team to provide prompts and cues, and that this was a step in the research procedure. I can see the additional therapy / rehab is reported in your manuscript (in table 2), but do

not see the report / outcome regarding the amount of 'other' prompting that the clients received. Please include this in your manuscript. However, if this did not occur or was unable to be measured and reported, this should be stated.

Response: A section with information about the intervention received is provided under the chapter 'Procedural fidelity, acceptance, and practicability' in the Result chapter. Added: 'For all three participants all five tasks were worked on sequentially in each session. For all participants the nursing staff followed a simplified intervention plan made with suggested strategies; however, this plan was followed to various degrees and not recorded in detail.'

Target behaviour

This is well detailed; however from your description, I expected to see each of the 5 behaviours targeted plotted separately for each client. More information needs to be provided here about how you arrived at one visual representation (graph) of target performance for each client from the 5 target behaviours.

Also, after reading the discussion, I am still unclear as to the format of an intervention session for each client, including which of the functional tasks were targeted in each session (e.g., only 1 of 5 behaviours, all 5); whether the behaviours were worked on sequentially or concurrently (or other?). Information on this specificity of the intervention you provided is required to aid the reader, and will strengthen this paper (plus aid replication of the study by others). Perhaps this information is inherent to OTs familiar with PRPP, but other clinician readers will struggle to understand your treatment in detail.

Information on the frequency of measurement / data collection for the behaviours (for the multiple baseline design) is missing; as is information on who undertook this measurement.

Response: This is to be found in the protocol article under different sections in the chapter 'Procedures'. About the targeting of the tasks in the intervention sessions, see the previous response above. Additionally text is provided: 'measuring them each at least once during each phase, provided five measurement points all together'.

The generalisation measure of the Barthel index is appropriate, however I do not understand how the GAS goal is a generalisation measure. What goals were set? Were these related to the 5 behaviours / functional tasks that they were receiving PRPP interventions for? These need to be explicitly stated and reported for each client; and the GAS scores reported on at the three timepoints for each client.

Response: To clarify how the GAS is a generalisation measure we refer to the protocol article: 'Generalisation measures will be used to evaluate whether there are relevant changes beyond the primary and secondary outcomes and, thus, contribute to external validity. The Goal Attainment Scale (GAS) and the Barthel Index (BI) will serve as generalisation measures for the target behaviors. The GAS provides an individualized measure for a clinically meaningful level of performance for the five tasks. The GAS is a method of quantifying the extent to which the participants' individual goals are achieved during intervention.'

The information is changed in this manuscript to clarify these comments and comments from reviewer 3 (p.10) into 'The 5 target behaviors were inserted into the GAS. Based on observations made by the OT a score of -2 is the baseline value, 0 represent the expected short-term goal attainment, better outcomes are indicated by scores of +1 and +2, and outcomes below the expected short-term goal attainment are indicated by scores of -1. The BI includes ten tasks: eating, bathing/showering, personal hygiene, dressing, bowel and bladder control, toileting, transfer between bed and chair, mobility, and walking stairs. The index uses a score of 0, 1 or 2 points, with a maximum score of 20 indicating independence in the tasks and the lowest score of 0 indicating total dependency based on observations made by a member of the interdisciplinary team.'

GAS scores are added and reported in table 2.

In the final paragraph, you report collecting qualitative statements from clients, use of journals etc – however you do not specify the procedure for this at this point in the paper, and need to provide more detail on the process at this point. I do see some other detail on this has been provided in the procedural fidelity section when detailing acceptability(eg collected by OTs), however information needs to be provided earlier, or better linked. The methodology for your qualitative research component needs to be much more explicit and clear, and given how detailed you are regarding the quantitative measures in the previous section, the difference between these is noticeable. This is also commented on below.

Response: Added to the last section in the chapter 'Target behaviour': 'were noted by the OT in the procedure document and contributed...'. Information about the qualitative research component is also provided under the chapter 'Procedural fidelity' to be more explicit (see response below).

Procedural fidelity

For the checklist of the procedure, please report here who collected this data (e.g., OTs vs researchers); and whether this was self-rated or independently rated or verified by another?

Response: This is described in the protocol under section 'Procedural fidelity' p.6: 'A checklist for the entire protocol is made, where the treating OTs mark the steps as completed or not. This checklist is assessed by the first author, and high fidelity is suggested by at least 80% agreement with the procedure checklist.' Added in this manuscript under chapter 'Procedural fidelity': 'completed by each OT and assessed by the first author.'

Your manuscript will benefit from some additional detail on your research processes for assessment of acceptability of the intervention (see my previous comment on definitions also). This includes providing information on how the data was captured by the researchers (e.g., verbatim, recorded then transcribed, notes made during the meeting / dialogue); process and method of analysing this data and the research rigour around this. As this seems to be the qualitative component of your study, much more specificity and detailed methods are required. Also, what was your determination / measure of "acceptability" and how does this relate to the qualitative data being captured? Please include.

Response: We have modified a sentence about data concerning feasibility from mixed method to 'various methods to collect information' under the first section in the chapter 'Method'. No explicit analyses were performed of the qualitative information gathered, more a description of what was observed and said as feedback if the procedures had to be refined to be acceptable and if this was possible inside the frames of the methodological rigor. The text is changed to provide more transparency: 'Notes were made by the first author during the meetings, with the possibility of email for clarification.' We also refer to answers about acceptability given under the chapter 'Method' above.

Blind rating and interrater reliability

I am unclear about the outcome of your planned blinded rating and interrater reliability rating. Was interrater reliability planned but not undertaken? Did it occur for less sessions than planned? Or did you need to use a different measure all together (i.e., independent non-blinded assessment by other OT of measures)? Please detail the outcomes of this – i.e., interrater reliability rating you received and number of sessions that were rated for this (IRR %); plus your % rating for the non-blinded independent assessment. This is important data to report. I note you discuss missing data in the discussion, but you need to report the actual %s in your results as well as amount of missing data.

Also, you have not specified which 20% of sessions were rated (or planned to be rated) – e.g., whether these were randomly allocated sessions, or whether set sessions were chosen for rating (e.g., every 5th session). Adding this detail will strengthen the paper.

Response: Several changes made in the chapter 'Procedural fidelity, acceptance, and practicability' to clarify. Interrater observations occurred for fewer sessions than planned as described in the chapter. We have added information showing in what phases this was undertaken, and if it was made from video recording (and then blinded) or by direct observation. This can also be seen in the procedural checklist added as supplementary files. The OTs chose freely what task were chosen or when that fitted in their schedule, because of extra planning to video record, or no consent from the participant to video record (Carl had consented at the patient consent form but rejected video recording in the explicit situation), or some tasks more intimate than other, or to match the work schedule or for the second OT by direct observation.

Data Analysis and Results

This section requires some work to make it more explicit to the reader exactly what data was analysed, plotted and then represented in the paper.

Primary outcome measure: PRPP stage 1 percentage mastery. You state you graphed all five tasks for each participant – from this, the reader infers that you plotted their outcomes on five different tasks, however in the results graph a summary score is presented.

Please provide additional detail on:

-the rationale for not graphing each task for your results – there is some mention of this in the discussion, but additional information may need to be provided earlier

-how the summary measure (presented in the graph) was obtained from the 5 tasks assessed? Was this an average or mean score of the combined % of mastery across the 5 tasks at each data collection point? In 'Effectiveness of intervention' section you detail collapsing mean and median scores – this section is unclear and the methodology needs further detail / explanation.

Response: Details provided under chapter 'Target behaviour' in the Method chapter to clarify: 'measuring them each at least once during each phase, provided five measurement points all together'. This also means that each measurement point is graphed, and then later discussed that this might need to be changed for further studies.

Under the chapter 'Data analysis' in the Method chapter we added that the tasks were presented in 'fixed order'. Also added under the result chapter about the Effectiveness of the intervention: 'However, the calculation of the stability of the baseline data, overlap and consistency of the data pattern across similar phases, and trend lines within each phase cannot be used when there is only one measurement point for each of the five separate tasks, even though they constitute five measurement points all together'. These clarifications contribute to transparency what was done and what is discussed about using the five tasks.

-the frequency of data capture for the MBD design, how this relates to the number of sessions in the intervention (e.g., Anne – 9 sessions Carl – 30 sessions), and how this relates to the graphed data – not every session is plotted. How was this determined?

Response: Not every session was assessed, only five sessions and one of the tasks at the time – out of consideration for the workload for the OTs. As described in chapter 'Procedural fidelity' there was a misunderstanding about Carl doing 27 sessions before post-intervention data collection. This is also commented under response to reviewer 3 p.14.

-how the intervention as provided: Were all 5 goals addressed within each intervention session? If not, were they worked on evenly across the program (e.g., all goals received the same amount of intervention time?) Reporting this will help the reader understand your intervention and its reporting.

Response: Added for clarification in chapter 'Procedural fidelity, acceptability, and practicability' as reported in previous response under your chapter 'Intervention to be studied'.

Clinical significance

If you are keen to use the term 'significant' in relation to clinical change, please provide a definition of how you determined 'significance' (as opposed to 'clinical improvements' or 'clinical change'). The term 'significance' may be misconstrued (within a statistical sense) which is not your intent – so providing a definition on this will aid the reader.

Response: We chose to use clinical 'significance' because the main literature we used about the method refers to this term (Tate & Perdices, 2019), as we have understood partly to distinguish between statistical significance and what is clinically meaningful – significant. The 'definition' we used is a collapsed meaning from several chapters and sections in Tate & Perdices (2019). I.e.: Clinical significance is no single measure but can be evaluated from the perspectives of normative comparisons, change from dysfunctional level and social validation, clinical significance is subjective what changes are important or meaningful or a practical difference to an individual's functioning in everyday life (or for persons they interact with), or clinical significance is related to the goal of therapy, and context matter.

We have clarified the term 'clinical significance' by adding information under the chapter Target behaviour: 'Clinical significance reflects the rehabilitation goals and the potential difference the treatment contributes to practical, social, or applied value in the everyday life of the participants.' For further concretization we refer to the chapter 'Data analysis'.

Tate, R. L. and M. Perdices. Single-Case Experimental Designs for Clinical Research and Neurorehabilitation Settings. Planning, Conduct, Analysis and Reporting. Publisher: Routledge 2019

Could you provide some additional detail as to Carl's intervention and what 'post-intervention 1' and 'post-intervention 2' mean, in relation to treatment. I understand he had a prolonged intervention period compared with the other clients but struggled to comprehend the difference in the intervention(s) being provided across the intervention phase (i.e., intervention vs post-intervention 1 vs post-intervention 2).

Response: As the researchers discovered the misunderstanding with Carl's prolonged intervention phase, the OTs did a post-intervention assessment immediately, and then again, the day before discharge to home, to establish a basis for comparison to the follow-up phase 4 weeks after discharge to home. Clarification provided to the chapter 'Procedural fidelity, acceptability, and practicability': 'To score a basis at discharge for the follow-up measurement, the OTs scored a second postintervention phase.'

You report GAS improvements but have not stated the GAS goals or reported their scoring. Please include in your manuscript.

Response: A column with information provided in table 2 and see previous response under your chapter 'Target behaviour'.

In your methods you report having the Barthel and GAS as measures of 'generalisability' of your intervention. Consider using similar wording / making this more explicit when you report these results here.

Response: We refer to previous response under your chapter 'Target behaviour'. We have also provided details added under chapter 'Clinical significance': 'This may contribute to external validity but give otherwise small benefits to lighten measure of generalisation.'

I cannot find where you reported your secondary outcome measures (PRPP stage 2). Does this link to the data you present in figure 3? Providing text around this figure and these findings is needed to assist the reader to understand the outcomes / results for this section.

Response: Figure legends added underneath both figure 2 and 3 to clarify.

Discussion

The stated strengths of your study, and your arguments for providing rehabilitation and this intervention to this client cohort are well made.

You highlight the limitations of the study effectively.

Your discussion of how you measured and presented / graphed your study data (e.g., repeated measures vs measures across tasks) – there needs to be clearer explanation earlier in your manuscript of what you treated and measured (e.g., in methods and results), to aid the reader to interpret your intervention and data. Even now, I am unclear as to what an intervention session looked like for each client, including which of the functional tasks were targeted in each session (e.g., only 1 of 5 activities / goals, all 5), and whether they were worked on sequentially (e.g., working on putting on deodorant for a few sessions or until mastery, then working on brushing hair) or worked on concurrently.

Response: Changes made in the Method chapter.

Final comments

It has been a pleasure to see the outcomes of your study presented, and I commend you again on undertaking a complex intervention study in the “real world” of clinical practice, with all its inherent demands and complexities. The majority of my comments are on additional presentation and clarification of your processes / methodology and data – this will support and strength this excellent clinical paper.

Response: Thank you!

Reviewer: 2

Dr. John Gilroy, University of Sydney

Comments to the Author:

They only had three participants. This number does not suffice their aims nor support their conclusions.

Response: This pilot study follows the recommendation of participant number, tiers, and samples for Multiple baseline designs in Single-case experimental design methodology (ex.: Kratochwill, et al. 2013, Tate & Perdices, 2019). We will not draw conclusions of the effect based on this feasibility pilot study, but it can give indications of the effectiveness for further studies. Kazdin (2021) discusses the differences between Single-case experimental designs and group methodology.

Kazdin, A. E. Single-case experimental designs: Characteristics, changes, and challenges
Journal of the Experimental Analysis of Behavior 2021 Vol. 115 Issue 1 Pages 56-85

Kratochwill, T. R., J. H. Hitchcock, R. H. Horner, J. R. Levin, S. L. Odom, D. M. Rindskopf, et al.
Single-case intervention research design standards. Remedial and Special Education 2013 Vol. 34
Issue 1 Pages 26-38

Tate, R. L. and M. Perdices. Single-Case Experimental Designs for Clinical Research and Neurorehabilitation Settings. Planning, Conduct, Analysis and Reporting. Publisher: Routledge 2019

Reviewer: 3

Dr. Melissa Nott, Charles Sturt University Comments to the Author:

This pilot study evaluates the fidelity of PRPP Intervention with older people who have an ABI. The stated aim is to prepare for a larger planned intervention. This is an important first step in the author's research before undertaking the planned larger study. My primary concern with the manuscript is the lack of detail in the methods and reporting of findings as outlined below. Comments also included on the manuscript.

It is difficult to fully evaluate the appropriateness of the methods, which refer to an unpublished protocol (reference 21). Insufficient detail contained within this publication. Inclusion of the fidelity checklist as supplementary material would also be useful.

Results are not provided in full. Basic values of GAS and BI not provided. Statistical analysis of GAS and Barthel change should be included. Greater interpretation of PRPP graphs required. Inclusion of checklist required as it is not possible to determine if all threats to fidelity were considered.

Response: The comments are clarified in the detailed separate comments below and the protocol article is provided as a supplementary file. Statistical analyses of GAS and Barthel scores were not initially planned, however this is something we will consider for future papers. We sought to get information whether GAS scores showed improvement in the same tasks as the target behaviours, and Barthel scores provided an insight into the level of overall functioning and independence in primary self-care tasks, as well as improvements in tasks not necessarily worked on in the PRPP sessions. Though this topic was considered for discussion, we found other issues to be of higher priority.

*Please note, this reviewer has attached separate comments ("bmjopen-2022-067593_Proof_hi.pdf"):

Response: Here converted to a Word document, then copy – pasted below:

p.4: I would suggest this is a goal that is personal rather than political

Response: From research we know that this often is a personal goal, and for occupational therapist part of the core competencies and agenda in community health services. In Norway this is also an explicit political goal and a reason for making occupational therapy an obligatory profession in community-based health services. I assume both personal and political goal can be justified but we choose to use 'political' as the section content information about the Norwegian context.

p.4: It is unclear how this differentiation between how OTs perceive themselves in different sized municipalities is relevant to the study

Response: This is about the context where the OTs work and shows that they may not can specialize to work with one client group (diagnose, age, context). It is therefore relevant to the choice of intervention, and PRPP is suitable for various clients and contexts.

p.5: The formal name of the Perceive, Recall, Plan and Perform System should be capitalised throughout the manuscript

Response: Changed in title and throughout the manuscript.

p.5: Reference needed to support this statement

Response: Reference added, and 'younger persons with traumatic brain injury' is refined to 'adults with acquired brain injury'.

p.5: Comma between references missing
Response: Comma added.

p.5: Please reconsider the use of the term "elderly" which could be replaced by older people/older person/older clients - the term "elderly" is often associated with ageist stigma
Response: Changed throughout the manuscript.

p.6: This protocol is unpublished - therefore it is difficult to evaluate the methods
Response: See the first response at reviewer 1, protocol is now published.

p.6: The fidelity checklist should be provided as supplementary material
Response: Fidelity checklists provided as supplementary material.

p.7: Additional detail on training required
Response: Additional information provided: 'They were trained and certified in The PRPP System of 6 years ago at the time of inclusion and have in the years since regularly used the PRPP System in their clinic with various clients with information processing challenges.'

p.7: This does not constitute random allocation. It also seems that allocation to baseline length was not randomized
Response: This was a discussion in the peer reviewed protocol article as well, and it is clear that this is no randomization as per definition of randomization. With the term random we meant that the decision of which participant was allocated to what length of baseline phase was predefined, and that the random aspect of the allocation of the participants is that neither the researcher nor OT had influence on the length of baseline phase. We have modified the sentence in the way that the term 'random' is removed.

p.8: Please clarify what this exclamation mark is for
Response: It is because he has reduced vision and to point out that he does not find pleasure in watching TV but listen to TV. We choose to change to a * with legends below the table: '*because of reduced vision'.

p.8: I'm not sure what practical reparations means - does this mean household repairs?
Response: Yes, we think that will cover the meaning. Changed to household repairs.

p.8: Does this mean exercises regularly?
Response: Yes. Changed to exercises regularly.

p.8: Clarify what is meant by "uncritical behaviour"
Response: Information about Carl changed to be more explicit 'poor tolerance and impulsive control' and Birger changed to 'impaired judgement, and plan of action'. None of them had been assessed with neuropsychological tests, so this is a description from the OTs through initial observations, journals, and reports from the interdisciplinary team.

p.9: Least to most prompting suggests that errorless learning was not the focus of training as suggested in the previous paragraph
Response: Sentences and words changed throughout the paragraph to clarify.

p.10: More detail needed on the processes of Goal Setting and Goal Evaluation - was this done in consultation with the MDT or only by the OT? Was goal evaluation done via observation of the goal or client report?

Response: The goal setting and goal evaluation for the specific tasks were only a process between the participant and the OT, for the sake of the PRPP intervention, and the basis were observation. This is made explicit in the chapter 'Target behaviour: measures and collection, first paragraph: 'Five needed or desired everyday tasks in the context for the participants were chosen by the OT in cooperation with each participant.' and in third paragraph: 'The 5 target behaviours were inserted into the GAS. Based on observations by the OT,.....'. This is also described in the protocol article under the procedures. The general rehabilitation goals for the participants are not reported in the research procedures, but we see that this could have been interesting.

p.10: These are not "worse" outcomes but suggest the goal has not been achieved. For example, of -2 is the baseline and someone progresses towards their goal but only achieves the rating of -1, they have not performed "worse" they have improved, just not to the desired level

Response: Changed. See comment under the chapter 'Target behaviour' reviewer 1.

p.10: The tasks/items included in the Barthel Index should be described in addition to the method for collecting this data - was it observational or reported to the OT by the client or other staff

Response: See response to reviewer 1 under chapter 'Target behaviour'.

p.10: Clinical significance of what?

Response: We refer to the answer of reviewer 1's chapter Clinical significance.

p.11: This checklist should be provided who completed the checklist?

Response: We refer to the response to reviewer 1 under the chapter 'Procedural fidelity'.

p.11: Microsoft Teams

Response: Microsoft added to Teams.

p.11: This suggests that all OTs were present when completing the fidelity checklist - could this create the concern that OTs positively reported their behaviour? wouldn't it be better to have individual meetings with each OT?

Response: The checklist was completed by the individual OT, but the meetings around acceptability and practicability of the research procedures in the clinic were with all the OTs present. Details provided in text under chapter 'Procedural fidelity' in Method chapter: 'completed by each OT and assessed by the first author.' We refer to the response to reviewer 1 under chapter 'Procedural fidelity' as well.

p.13: Consider if "standing up from wheelchair" is a task

Response: This is a factor the authors and the treating OTs have discussed, and we will explicitly discuss this in other upcoming papers. This is an important discussion that we want to highlight in future publications but unfortunately do not find enough space for in this paper. To stand up from wheelchair is a pivotal 'task' for many other activities and for this participant a very important part of the activity goals, and not limited by hemiparesis but from cognitive challenges.

p.13: Discussion with who?

Response: Changed to 'The OT had a thorough discussion with Birger about important tasks.'

p.14: Significant variation in number of PRPP sessions - how does this potentially impact on analysis?

Response: Yes, this is a limitation that we will try to avoid in the future data collection, and to show this limitation we discussed this under the chapter 'Strengths and limitations of the study'.

p.14: Insufficient description of the Stage 1 and Stage 2 PRPP data - additional interpretation is needed particularly for readers unfamiliar with PRPP and radar graphs.

Response: This is understandable but our consideration of space for this feasibility pilot manuscript we must be briefer than in upcoming manuscripts where the effect of the intervention is the main outcome. A score above 85-90% mastery indicates independence as mentioned in chapter 'Target behavior: measure and data collection'. We still put in words and sentences that can help understand the interpretation in the chapter 'Effectiveness of intervention on task mastery and cognitive strategy application' and as figure legends.

p.15: His recovery

Response: It refers to both Anne and Birger and therefore we changed to 'the participants' recovery'.

p.15: This data should be presented (GAS and BI)

Response: See response reviewer 1 (chapter Clinical significance) in this case.

p.15: Without inclusion of the checklist is it not possible to evaluate if all threats to fidelity were evaluated

Response: Fidelity checklists for all three participants added as supplemental material.

p.16: This is an important aspect of determining intervention acceptability - was time to administer, time to score/interpret findings collected as part of feasibility? what about any challenges identifying suitable goals? challenges implementing the PRPP intervention?

Response: Yes, what you here explicit point out was all part of the dialogue with the OTs. In the text we have chosen to write this as an 'overall feedback, but the dialogue was focused on the steps in the procedure compared to their regular practice and to the PRPP manual.' We think this cover interpret findings, identifying suitable goals and implementing the PRPP intervention. In the results we particularly mention 'greater workload', and we added some details 'such as the time needed to administer scores and documentation'. Information is also added under Method section 2 as a response to the first reviewer.

If you mean if it was challenging implementing the PRPP intervention in the rehabilitation services, the OTs in the project already used this intervention. The descriptions under the 'Research setting' cover this.

p.17: Will three data collection points in each phase be sufficient for analysis? this could be particularly problematic in clients who have variable performance. Data stability within each phase may not be achieved.

Response: We agree this could be a problem. We collect data in real world practice with OTs without extra time in their schedules to do research and limited rehabilitation services assigned to each client. Ethical concerns out of the consideration to the participant is also a factor, i.e. the effort they put in their entire rehabilitation process and the effort to fulfil the methodological rigour and data stability. We hope and strive for that they manage to collect at least 5 measures of each task but may have to compromise with three measure points as recommended (5 measure points but at least 3) in Kratochwill et al (2013). The variability of performance we know that can appear in these older participants with co-morbidities will certainly be discussed in future papers when we see the results of the data collection.

Kratochwill, T. R., J. H. Hitchcock, R. H. Horner, J. R. Levin, S. L. Odom, D. M. Rindskopf, et al. Single-case intervention research design standards. Remedial and Special Education 2013 Vol. 34 Issue 1 Pages 26-38

p.18: This statement requires more clarification

Response: We have changed the wording from 'contraindicated' to 'complicated' to appear less assertive and added information: 'As trained PRPP therapists, the OTs have a manual to follow but

must react with flexibility with regarding to what each situation requires.'. There is also information in the protocol article that contribute to clarification: 'The treatment sessions are highly individualized to the participant and the context and are not externally assessed for fidelity. The fact that the OTs need PRPP training and are assessed as competent supports the delivery of the interventions across the treating OTs.'

p.20: Incomplete reference

Response: We chose to change the reference to a reference more easily available for the public. Changed to: C. Chapparo, J. L. Ranka and M. T. Nott. Perceive, Recall, Plan and Perform (PRPP) System of Task Analysis and Intervention. In: Occupational therapy for people experiencing illness, injury or impairment: Promoting occupation and participation., edited by M. Curtin, M. Egan and J. Adams. Elsevier 2017 7 edn.

Reviewer: 1

Competing interests of Reviewer: nil to declare

Reviewer: 2

Competing interests of Reviewer: N/A

Reviewer: 3

Competing interests of Reviewer: Pre-existing academic relationship with 4th author

VERSION 2 – REVIEW

REVIEWER	Watter, Kerrin Princess Alexandra Hospital Health Service District, ABI TRS
REVIEW RETURNED	19-Jan-2023

GENERAL COMMENTS	<p>I would like to acknowledge the work your team has undertaken to address concerns raised in the previous review, and I commend you for undertaking the a clinically based research project that has multiple factors impacting its delivery and success. However, there are still some areas that require further attention in the manuscript that were not fully addressed in the previous review. Additionally, new comments / areas to be addressed have arisen, as the methodology has been clarified / more specific information has been provided regarding the processes undertaken in your study. This is particularly around the methodology and data collection and presentation within your SCED.</p> <p>With your clarification of methodology and the data contained in the SCED graphs (i.e., data belonging to multiple targets within each phase), I am now concerned that your current dataset does not meet the criteria for a SCED – i.e., you have not presented multiple data points of each target behaviour within each phase for participants; instead, you have presented data points from multiple target behaviours within each phase. This is a large methodological concern.</p> <p>However, the remainder of your paper and processes undertaken continue to have merit.</p>
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	<p>I have made a number of comments below which may help improve the overall management and presentation of your data and assist you to better detail the methodology you have followed.</p> <p>1. SCED methodology and charting of data My major concern is around the data reporting in your SCED graphs - the PRPP phase 1 data that comes from a range of different tasks / activities. To follow SCED procedure, each target behaviour (i.e., each of the 5 tasks targeted for each participant) needs to be presented and graphed separately. You need present the performance on each target activity over time for each participant (e.g., showering @ baseline, intervention, post intervention; brushing hair @ baseline, intervention, post intervention). I do not think it is methodologically appropriate to present and interpret the data they way you have, and I am unaware of existing research that supports presenting data in this manner when reporting of a SCED intervention. I believe that to progress this paper, you need to present your data in another manner. You need to clarify which tasks each data point refers to and show performance of each activity or task over time. I recommend revising and remaking the graphs to present / identify each behaviour separately, to show the change related to each target behaviour over time and across the phases. Also, please add a label to the x axis (eg was this days? session number?). Further, I was wondering if you had access to your client performance data / client recordings to determine additional measurement points for your SCED for each behaviour for clients? e.g., access to video recordings of your sessions which you could use to provide additional ratings on the PRPP within each phase?</p> <p>2. Article summary – strengths and limitations Please revise the wording of your second dot point, as I don't believe this is accurate – you have not demonstrated an effective intervention through your primary outcome measure, as you have not been able to statistically show this from your SCED data, and your current presentation of this data is questionable. However, you have demonstrated that the PRPP can be performed as a treatment in clinical practice, and you have demonstrated clinical improvements following PRPP intervention in your generalisation measures / other clinical measures (eg GAS, Bartel). I suggest you reword this statement to better represent your findings.</p> <p>3. Target behaviour: measures and data collection (a) Secondary outcome measurement Thankyou for including the labels for the figures, this has helped readability. However, for your PRPP Stage 2 measures (which were your other outcome measure) you need to report when these were made within each phase (e.g., when in the baseline; when in the intervention component) for each participant. (b) Where you detail the generalisation measures (GAS, BI) please also include in your manuscript that these are reported in Table 2 - this will assist the reader to find this data.</p> <p>4. Feasibility measures You state how these were taken and by whom (eg by treating OT and first author – see procedural fidelity), and you report these for each client in the results; but you do not report an interrater reliability of these measures (e.g., how often were the treating OT and the first author in agreement in this scoring?). Including this</p>
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	<p>would add value to your paper and demonstrate research rigour of the processes undertaken.</p> <p>5. Blind rating and interrater reliability You state you will obtain IRR for 20% of the PRPP stage 1 and 2 measures. However, you do not report your IRR results in the manuscript. This either needs to be included, or you need to state this did not occur. Also, in the section “Procedural fidelity, acceptance and practicability” you report procedural checklist results (which is your stated measure of feasibility) but also mention inter-rater reliability for Anne. I found this very confusing. Is there a relationship between your procedural checklist measures (fidelity) and then the measures from PRPP stage 1 and 2 that you are using for your planned IRR measures (20% of these)? This reporting in the results needs to be clarified.</p> <p>6. Data analysis Your statement of “The purpose was to determine whether the outcomes and graphs were appropriate to show immediate improvement in the target behaviours when the intervention was introduced and whether this improvement was maintained to the postintervention phase” is accurate, but not reflected in the way you present your data, as you cannot tell which target behaviour belongs to which data point, and you do not demonstrate the change in one target behaviour over time. Changing how you present the data in your graphs will help your data better adhere to this statement. (see comment #1).</p> <p>7. Table 2 + GAS goals I understand that your Tasks chosen are also the goals you set with the GAS. Please indicate this in the table / revise this wording so readers quickly understand that the tasks are also the areas that became GAS goals. If you are able to also include the wording of the goals, this would be beneficial, but perhaps rewording components of this table will achieve this result.</p> <p>8. Effectiveness of intervention on task mastery and cognitive strategy application You write: “the mean and median scores for task mastery....” But you only present the mean score in your graph. I don’t understand why you reference the median score if you are not presenting data involving the median score. If keeping this section (after graph review), consider whether you want to include information on the median score or not.</p> <p>9. Clinical significance I know we have previously discussed the use of the term significance, and that you have changed this to clinical significance and provided an earlier definition. However, without a formal statistical measure of change, this is still a problematic term to use. I recommend you consider using a different term or heading - e.g., “clinical change” or “meaningful clinical change”, and avoid use of the term significant.</p> <p>10. Discussion Suggested rewording of the section: “Ideally, the target behaviour should be the exact same task measured five times.” This is not “ideally” but is what a SCED should involve. I recommend not using the word “ideally”, with the sentence</p>
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	<p>reading: "The target behaviour should be the exact same task measured five times."</p> <p>11. Procedural checklist You stated this would be provided as a supplemental file, but I could not find this to review / was not available in the upload. This would be useful to include in the future.</p>
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REVIEWER	Nott, Melissa Charles Sturt University, Community Health
REVIEW RETURNED	27-Feb-2023

GENERAL COMMENTS	The authors have conducted a thorough review of the earlier manuscript taking into account the feedback and suggestions for all reviewers. Having the protocol now published alleviates the concerns I had previously raised re: lack of detail on methods and including the fidelity checklist as supplementary material provides greater transparency thank you.
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Kerrin Watter, Princess Alexandra Hospital Health Service District Comments to the Author:

I would like to acknowledge the work your team has undertaken to address concerns raised in the previous review, and I commend you for undertaking the a clinically based research project that has multiple factors impacting its delivery and success. However, there are still some areas that require further attention in the manuscript that were not fully addressed in the previous review. Additionally, new comments / areas to be addressed have arisen, as the methodology has been clarified / more specific information has been provided regarding the processes undertaken in your study. This is particularly around the methodology and data collection and presentation within your SCED.

With your clarification of methodology and the data contained in the SCED graphs (i.e., data belonging to multiple targets within each phase), I am now concerned that your current dataset does not meet the criteria for a SCED – i.e., you have not presented multiple data points of each target behaviour within each phase for participants; instead, you have presented data points from multiple target behaviours within each phase. This is a large methodological concern.

However, the remainder of your paper and processes undertaken continue to have merit.

I have made a number of comments below which may help improve the overall management and presentation of your data and assist you to better detail the methodology you have followed.

1. SCED methodology and charting of data

My major concern is around the data reporting in your SCED graphs - the PRPP phase 1 data that comes from a range of different tasks / activities. To follow SCED procedure, each target behaviour (i.e., each of the 5 tasks targeted for each participant) needs to be presented and graphed separately.

You need present the performance on each target activity over time for each participant (e.g., showering @ baseline, intervention, post intervention; brushing hair @ baseline, intervention, post intervention). I do not think it is methodologically appropriate to present and interpret the data they way you have, and I am unaware of existing research that supports presenting data in this manner when reporting of a SCED intervention.

I believe that to progress this paper, you need to present your data in another manner. You need to clarify which tasks each data point refers to and show performance of each activity or task over time. I recommend revising and remaking the graphs to present / identify each behaviour separately, to show the change related to each target behaviour over time and across the phases. Also, please add a label to the x axis (eg was this days? session number?).

Further, I was wondering if you had access to your client performance data / client recordings to determine additional measurement points for your SCED for each behaviour for clients? e.g., access to video recordings of your sessions which you could use to provide additional ratings on the PRPP within each phase?

Response: Thank you for bringing up these insightful concerns; your feedback will help us to be more accurate and specific in the future choices we make and the presentation of these choices. We have carefully considered different options for the present paper, resulting in some changes but also some reflections to justify the decisions we have made.

The paper report on a study piloting a protocol and we want the study to follow the planned design, but with revised presentations of graphs and the addition of specific clarifications, limitations, and recommendations for future projects. The subsequent intervention study will be more stringent and transparent if it can build on this pilot.

Under the heading 'Target behaviour: measures and data collection', we have added the following statement: 'The target behaviour consists of mastery across different daily tasks and capacity for the use of cognitive strategies in occupational performance'. We are aware that Nott, Chapparo and Heard (2008) used different tasks for the PRPP stage 2 outcome in the SCED design. One of the findings in this pilot paper is that for the PRPP stage 1 outcome, the suitable presentation of data is after measures of the exact same task, and this is presented as a limitation. For our future projects, we have chosen one task with several measurement points. We do not have video recordings from additional sessions from this pilot data collection.

Although the dots in the graphs were presented in a fixed order, we acknowledge that it was not intuitive to determine which dot corresponded to which task. To address this concern, we considered using another format, e.g., bar graphs that explicitly displayed each task, but this approach presented other issues, such as the inability to show the different lengths of the baseline phases and difficulties showing the overall pattern of improvement. Instead, we improved the clarity of the graphs by using different shapes for the dots and named them according to the activities they illustrate.

From an occupational science perspective (holistic, ecological, pragmatic) and informed by the goal of cognitive strategy intervention, it is important to consider the disadvantages of measuring only one specific task as a measure of mastery of occupational performance. In Doig, Fleming, and Ownsworth's (2021) SCED study that investigated the effectiveness of an occupation-based intervention incorporating meta-cognitive strategy instructions, the same task was used for repetitive measurements. At the same time, they assured that the task varied slightly from the previous

measurement to prevent any improvements due to repeated practice of the exact same task. This approach reflects the natural variability of occupational performance and the goal of meta-cognitive interventions. In their study, Nott, Chapparo and Heard (2008) used information processing capacity during occupational performance (of any task/different tasks) as the primary target behaviour in SCED. One reason for setting up the study was to implement real-life assessment and intervention tools to minimize practice reduction, using different tasks to simulate rehabilitation where multiple tasks are worked on simultaneously. However, after the pilot, concerns about the design led to the decision to choose one task with multiple measurement points that can occur within the context of different occasions to ensure practicality. A concern is that this approach may reduce the complexity and overlook the variability of occupational performance in real-life situations. Therefore, these issues should be balanced and discussed in future studies.

It is important to note that different tasks have varying levels of difficulty, and mastery of steps in a stage 1 PRPP assessment will have a great deal of variability, as seen in the graphs in this pilot. In a stage 2 PRPP assessment, the use of cognitive strategies will follow patterns, and specific cognitive strategies will be harder to apply (Nott & Chapparo, 2020).

The spider diagrams showing cognitive profiles still present the mean scores of all five tasks, as patients mostly show a pattern of cognitive strategy application, and this pattern is used to plan the intervention most effectively. Presenting PRPP stage 2 with one cognitive profile for each task would also have required a great deal of space. A visual graph could have been used for these data for the overall percentage, but then we would have lost the overview of what part of information processing is most impacted.

We have added x-axis labels to the graphs.

E. J. Doig, J. Fleming and T. Ownsworth (2021) Evaluation of an occupation-based metacognitive intervention targeting awareness, executive function and goal-related outcomes after traumatic brain injury using single-case experimental design methodology, *Neuropsychological rehabilitation*, Vol. 31 Issue 10 Pages 1527-1556

M. T. Nott, C. Chapparo and R. Heard (2008) Effective occupational therapy intervention with adults demonstrating agitation during post-traumatic amnesia, *Brain Inj*, Vol. 22 Issue 9 Pages 669-83

M. T. Nott and C. Chapparo (2020) Cognitive strategy use in adults with acquired brain injury, *Brain Inj*, Vol. 34 Issue 4 Pages 508-514

2. Article summary – strengths and limitations Please revise the wording of your second dot point, as I don't believe this is accurate – you have not demonstrated an effective intervention through your primary outcome measure, as you have not been able to statistically show this from your SCED data, and your current presentation of this data is questionable. However, you have demonstrated that the PRPP can be performed as a treatment in clinical practice, and you have demonstrated clinical improvements following PRPP intervention in your generalisation measures / other clinical measures (eg GAS, Bartel). I suggest you reword this statement to better represent your findings.

Response: The second bullet point has been changed to the following: 'The pilot indicates that the PRPP intervention can contribute to meaningful improvements in task performance'.

3. Target behaviour: measures and data collection

(a) Secondary outcome measurement

Thank you for including the labels for the figures, this has helped readability. However, for your PRPP Stage 2 measures (which were your other outcome measure) you need to report when these were made within each phase (e.g., when in the baseline; when in the intervention component) for each participant.

(b) Where you detail the generalisation measures (GAS, BI) please also include in your manuscript that these are reported in Table 2 - this will assist the reader to find this data.

Response: a) We have added text stating that this scoring happens in/after the same observation as PRPP assessment stage 1: 'PRPP assessment stages 1 and 2 were scored in the same observation and were used to collect data from all five tasks in all four phases'.

b) We have added the following text: 'reported in table 2'.

4. Feasibility measures

You state how these were taken and by whom (eg by treating OT and first author – see procedural fidelity), and you report these for each client in the results; but you do not report an interrater reliability of these measures (e.g., how often were the treating OT and the first author in agreement in this scoring?). Including this would add value to your paper and demonstrate research rigour of the processes undertaken.

Response: Under the heading 'Procedural fidelity', we previously wrote the following: 'Data concerning feasibility were gathered with a checklist of the steps in the procedure completed by each OT and assessed by the first author.' The intention was that the OTs ticked the steps and/or documented steps in the procedure document, after which the first author transferred the information to a checklist and counted the steps completed and then calculated the agreement. Therefore, the 'agreement' is between the prepared procedure checklist and what the OT actually did. We have changed the sentence to make this point clearer: 'Data concerning feasibility were gathered by the first author, who counted the procedure steps documented by each OT and compared them with the procedure checklist'.

5. Blind rating and interrater reliability You state you will obtain IRR for 20% of the PRPP stage 1 and 2 measures. However, you do not report your IRR results in the manuscript. This either needs to be included, or you need to state this did not occur.

Response: Our aim measuring inter-rater agreement was to monitor whether there was observer drift as the OT collecting data also provided the intervention. We have added the data for the mastery of

the steps in the PRPP stage 1, as it is feasible with the planned formula for calculating inter-rater agreement; in future work, we will search for the most appropriate method to analyse the inter-rater agreement for the scored PRPP stage 2 data. A whole section has been added under the heading 'Procedural fidelity, inter-rater agreement, acceptance, and practicability'.

Also, in the section "Procedural fidelity, acceptance and practicability" you report procedural checklist results (which is your stated measure of feasibility) but also mention inter-rater reliability for Anne. I found this very confusing. Is there a relationship between your procedural checklist measures (fidelity) and then the measures from PRPP stage 1 and 2 that you are using for your planned IRR measures (20% of these)? This reporting in the results needs to be clarified.

Response: The sentence has now been deleted.

6. Data analysis

Your statement of "The purpose was to determine whether the outcomes and graphs were appropriate to show immediate improvement in the target behaviours when the intervention was introduced and whether this improvement was maintained to the postintervention phase" is accurate, but not reflected in the way you present your data, as you cannot tell which target behaviour belongs to which data point, and you do not demonstrate the change in one target behaviour over time. Changing how you present the data in your graphs will help your data better adhere to this statement. (see comment #1).

Response: See the response to comment #1

7. Table 2 + GAS goals

I understand that your Tasks chosen are also the goals you set with the GAS. Please indicate this in the table / revise this wording so readers quickly understand that the tasks are also the areas that became GAS goals. If you are able to also include the wording of the goals, this would be beneficial, but perhaps rewording components of this table will achieve this result.

Response: In Table 2, the tasks are numbered, and the GAS-scores refer to the task numbers. This is now explained in the table text: 'The numbers of the GAS score are the same as the task numbers'.

8. Effectiveness of intervention on task mastery and cognitive strategy application You write: "the mean and median scores for task mastery..." But you only present the mean score in your graph. I don't understand why you reference the median score if you are not presenting data involving the median score. If keeping this section (after graph review), consider whether you want to include information on the median score or not.

Response: The reference to median scores has now been removed.

9. Clinical significance

I know we have previously discussed the use of the term significance, and that you have changed this to clinical significance and provided an earlier definition. However, without a formal statistical measure of change, this is still a problematic term to use. I recommend you consider using a different term or heading - e.g., "clinical change" or "meaningful clinical change", and avoid use of the term significant.

Response: The literature on single-case experimental designs refers to clinical significance as not depending on statistical measures of change (Tate and Perdices, 2019). We can see that meaningful clinical change covers the meaning, and we have changed the heading and term accordingly. The 'cut-off' for independence was changed from 85-90% to 85% based on a new version of the reference. The citation for reference 34 has been changed accordingly.

R. L. Tate and M. Perdices (2019) Single-Case Experimental Designs for Clinical Research and Neurorehabilitation Settings. Planning, Conduct, Analysis and Reporting. Routledge

10. Discussion

Suggested rewording of the section: "Ideally, the target behaviour should be the exact same task measured five times."

This is not "ideally" but is what a SCED should involve. I recommend not using the word "ideally", with the sentence reading: "The target behaviour should be the exact same task measured five times."

Response: To address this issue precisely, the sentence has been changed to read as follows: 'The decision to measuring five tasks instead of the same task five times was to make the data collection unobtrusive for the participant and keep the procedures close to ordinary practice, but this decision led to important bias of the analysis process'.

11. Procedural checklist

You stated this would be provided as a supplemental file, but I could not find this to review / was not available in the upload. This would be useful to include in the future.

Response: We have included the checklist as supplemental material. In the previous revision of this paper, we had included the checklist as supplemental material for editors only.

Reviewer: 3

Dr. Melissa Nott, Charles Sturt University Comments to the Author:

The authors have conducted a thorough review of the earlier manuscript taking into account the feedback and suggestions for all reviewers. Having the protocol now published alleviates the concerns I had previously raised re: lack of detail on methods and including the fidelity checklist as supplementary material provides greater transparency thank you.

Response: Thank you for the encouraging feedback.

Reviewer: 1

Competing interests of Reviewer: nil to declare

Reviewer: 3

Competing interests of Reviewer: Pre-existing academic relationship with 4th author

VERSION 3 – REVIEW

REVIEWER	Watter, Kerrin Princess Alexandra Hospital Health Service District, ABI TRS
REVIEW RETURNED	19-Apr-2023

GENERAL COMMENTS	The authors have appropriately addressed the areas identified in my previous review of this manuscript. The inclusion of additional information in the results (e.g., specific task data points, inter-rater agreement) and the procedural fidelity checklist have improved the clarity of the study findings for the reader. They have also successfully discussed their data collection limitations and impact on future research within the context of real-world clinical-research settings. Thank you for your work in this review.
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