

# PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

## ARTICLE DETAILS

### Title (Provisional)

Enabling participation in community-dwelling children and young people with acquired brain injuries and their families – a theory-, evidence- and person-based approach to intervention development

### Authors

Keetley, Rachel; Manning, Joseph C; Kettlewell, Jade; Williams, Jane; Bennett, Emily; Lyon, Victoria; Radford, Kate

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## VERSION 1 - REVIEW

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Reviewer	1
Name	Jenkin, Taylor
Affiliation	Murdoch Children's Research Institute
Date	24-Jul-2024
COI	Nil.

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Congratulations on developing the ABI-P intervention, and integrating findings from your scoping review, mixed-methods work, co-design workshop, and theoretical modelling. It is clear that the authors have spent a great deal of time on this project, and it was a pleasure to read the manuscript. This manuscript provides an excellent example of how to integrate findings from a range of studies into intervention development. I am sure that the findings will be relevant and meaningful to readers. I look forward to reading the published version and sharing it with my rehabilitation colleagues. Well done!

### Overall comments

Congratulations on developing the ABI-P intervention, and integrating findings from your scoping review, mixed-methods work, co-design workshop, and theoretical modelling. It is clear that the authors have spent a great deal of time on this project, and it was a pleasure to read the manuscript. This manuscript provides an excellent example of how to integrate findings from a range of studies into intervention development. I am sure that the findings will be relevant and meaningful to readers. I look forward to reading the published version and sharing it with my rehabilitation colleagues. Well done!

- Some sections are quite cumbersome and it is sometimes difficult to follow the authors' flow of ideas. Consider re-wording particularly long sentences to increase readability, e.g.,
  - P3, Lines 47-55 – "Findings from the workshop were analysed using the framework method and synthesized with previous findings using the BCW. The BCW and PBA guided the theoretical modelling of the intervention which included identifying guiding principles – highlighting key design objectives that were then mapped to

- intervention functions and behaviour change techniques, resulting in a logic model for the 'ABI-Participate' intervention."
- P7, lines 41-50 – "Once these have been identified, the BCW leads developers through a process identifying the components required for the intervention – intervention functions to target the behaviour and barriers, policies to support intervention delivery and behaviour change techniques, the specific strategies designed to change behaviour which are the active, observable, replicable and irreducible ingredient of an intervention – i.e., the proposed mechanism of change (32)"
- P11, lines 49-55 – "This demonstrated the complexity of communication and referral routes from acute to community health services and between health, education and social care providers, the lack of provision or capacity of long-term specialist support services and collaborative care pathways."
- Many sections are written in the passive voice, which can also make it difficult to follow the authors' ideas. Consider how the active voice can be further used throughout to increase readability, e.g.,
  - P6, lines 23-25 – "This complexity makes them difficult to implement, with factors likely to affect implementation needing to be considered and addressed in their development."
  - 'A. Synthesis of relevant literature – Scoping Review' section
- Please proof-read for typographical errors, e.g.,
  - "The 'ABI Participate' (ABI-P) intervention aims to support CYP-ABI and their families to identify and address participation and wellbeing needs."
  - P24, lines 21-23 – "An additional element identified in our study, and by Gagnon and colleagues' *[remove apostrophe here]* (46), was coaching and supporting CYP and families in identifying and achieving participation goals."
- The authors use a lot of acronyms throughout the manuscript, and some are unnecessary (i.e., those only used once). Reducing the amount of acronyms throughout might increase readability. Additionally, some acronyms are provided early in the manuscript, but are re-defined later.
- The authors refer to the TIDieR checklist, but it has not been completed.

## Abstract

- The acronym 'CYP-ABI' is used in the abstract but has not yet been defined.
- 'Children and young people' are referred to in the 'Participants' section. It would be helpful to include an age range here.
- "Stakeholders identified potential solutions and intervention ingredients (such as the need for education for families and schools regarding long-term impact of ABI, and longer-term practical and emotional support for families)." – the brackets could be removed here.
- The Abstract could link more specifically to the findings. The novelty of this multifaceted intervention should be highlighted here. I've made a similar comment in the 'Conclusions' section.
- The strengths and limitations are well articulated.

## Background

- Page 5, Line 6 – The authors refer to 'young people', but it is unclear what this means. Do they mean adolescents, or young adults as well? Including the age range would be helpful.
- Page 5, Lines 10-15 – "Outcomes within this population are heterogeneous with a range of influential factors such as injury severity, location, age at injury, premorbid abilities and personal, socioeconomic and environmental factors, e.g. family functioning (2, 3)." – should "e.g. family functioning" be in brackets here?
- The authors' rationale for this study is good. They briefly mention family impacts ("emotional

impact on the whole family, including siblings”) and highlight that “identifying and addressing individual family psychosocial and systemic issues is essential to ensure rehabilitation interventions can be effective (4).” It would be great to see further discussion of the impacts of childhood ABI on families, and greater explanation of why it is important to consider the family context when working with children and young people with ABI. Why is identifying and addressing family psychosocial and systemic issues essential? Given that this intervention focuses on CYP and families, this rationale needs to be stronger.

- The authors describe developing an intervention to increase participation and wellbeing for CYP and their families. I’m unsure what family participation looks like in this context. This could be described more explicitly in the Introduction.

### Theoretical frameworks

- This section is well-written and clear – well done integrating so many frameworks!
- Page 9, line 9 – The authors refer to ‘stakeholders’ throughout this section and state “It ensures that the views of individuals who will interact with the intervention (i.e. key stakeholders) are included throughout...” – it would be helpful to detail who these stakeholders are in the current study (i.e., CYP, parents, community stakeholders).

### Methods and Results

- It is helpful to see the Methods and Results integrated. This section clearly describes the many stages to the intervention development process. Well done.
- P11, Line 10 – The acronym ‘HRQoL’ has not been defined.
- P11, lines 13-14 – “Relationships were found between CYP participation and HRQoL and parental HRQoL and family functioning.” – This could be more specific. What was the nature of these relationships?
- P12 – The ‘D. Synthesis of findings’ section is well written and provides an excellent summary of previous sections. The numbered list of key issues is particularly useful.
- P12, lines 7-10 – “... the findings of the literature review and mixed-methods research were collated and synthesised using the framework method of analysis and the ICF, COM-B and TDF.” – What is the ‘framework method of analysis’? I can see that you’ve provided citations on P14, line 29-30 – these could be included on P12 as well.
- P12, line 52 – Authors state “A complex intervention was required...” – what is meant by ‘complex’? Does this mean multi-faceted, or something else?
- The authors’ description of the co-design process is excellent.
- P14, lines 30-34 – “The findings and themes were discussed with the research team and study steering group to validate coding and ensure rigour.” – how did this process ensure rigour?
- P18, line 6 – The authors refer to the ‘intervention objectives’ – are these the key issues identified in the mixed methods study? This could be more explicit.
- P18, line 50 – “The guiding principles combined with the behavioural analysis enabled a detailed intervention plan to be added to the guiding principles table” – What does ‘behavioural analysis’ mean here?

### Discussion

- The first paragraph of the Discussion nicely summarises the project.
- A lot of detail is included in the second paragraph of the Discussion, highlighting the complexity and strengths of the ABI-P intervention. The authors could make stronger links to existing

interventions and previously published literature, e.g., what makes this intervention different to others that have been developed in paediatric ABI?

- P23, lines 28-39 – “It is family-centred, tailored to individual needs and contexts and follows a rehabilitation process of assessment, goal setting, intervention delivery, monitoring and review (19). It includes elements of existing case management, coordinator, or patient navigator interventions. It also includes a therapeutic element of goal-oriented coaching. Both of which have been used in other health populations, including adults with TBI and CYP with neuro-disabilities (43, 44).” – Consider how the final sentence could be re-worded to remove the ‘Both of which’ at the beginning of the sentence.
- It would be great if the authors could reflect on childhood ABI occurring within a developmental period and how the ABI-P intervention could tailor to developmental stage.
- P23, lines 32-33 – The term ‘patient navigator’ is used. What does this mean?
- The authors refer to a systematic review conducted by Ogourtsova et al. Provide more information on what this systematic review was about. Could this be referred to in the Introduction as well?
- P25, lines 3-8 – “... the effectiveness of these on CYP and parental outcomes, recognising that these are linked with CYP outcomes improving when parent-related outcomes improve.” – this is a great point and should be raised in the Introduction section as part of the rationale for why family interventions are important.
- P25, lines 7-27 – The relevance of this section (starting with “Novak et al’s...”) to the current study is unclear.
- P25, lines 44-46 – “A future feasibility study should include exploration of both its acceptability and use and the impact of digital exclusion.” – What does ‘digital exclusion’ mean?
- The ‘Future directions’ section provides excellent ideas for next steps with the ABI-P intervention.

Conclusions

- The ‘Conclusions’ section could link more specifically to the findings. The novelty of this multifaceted intervention should be highlighted here (and in the abstract)!

Tables/Figures/Supplemental Appendices

- Table 1 – this table is excellent and helps the reader to follow your ‘Theoretical frameworks’ section
- Table 2 – This table provides an excellent summary of this work. It is clear that a lot of time and effort went into this project. Well done!
- Table 4 – The term ‘3<sup>rd</sup> sector’ is used – what does this mean?

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Reviewer	2
Name	Kusec, Andrea
Affiliation	University of Cambridge
Date	25-Jul-2024
COI	None

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This paper describes the co-design and development of wellbeing intervention for children and young people with an ABI and their family members. The study used a combination of

methodologies to map a logic model for an ABI-Participate intervention focused on education on ABI and practical and emotional support. Overall, the paper is well-structured and written clearly, with strong co-design elements to justify the ABI-participate intervention. I have some specific comments, as below.

- The introduction would benefit from covering the type and range of ABIs and any relevant evidence about participation changes in childhood ABI. The authors refer to other articles; methods but for readers it would be helpful to at least understand the author's definition of ABI, the type of ABIs included in all elements of the intervention development, and where relevant include any different intervention elements that differed by type of ABI.
- Related to the above, in the development of the intervention how were needs based on different kinds of ABIs considered? Potentially, depending on the type of ABI intervention elements such as transition to adult care may vary substantially (e.g., integration into a head injury vs stroke service), or for example in the type of education provided to schools (e.g., training on overlapping and non-overlapping needs of across a range of ABIs)
- Given the complexity of the intervention involving multiple roles, I wondered if through their co-design work the authors considered which professional roles might be best suited to implementing the intervention, or if this was a point of discussion in the co-design work – for example, who would be best placed to act as a liaison between services across sectors in providing social support/enabement elements of the intervention? NHS staff, charity workers, contracting a private sector? The authors mentioned that the intervention requires “skilled health/social care professional knowledgeable in ABI trained in intervention components” but it is currently not clear when implementing the intervention where researchers could first identify such individuals. Identifying roles best placed for such a complex intervention would aid in concretising its implementation.
- Was the final logic model reviewed/finalised with participants involved in the co-design studies prior to its development? If yes, were any changes suggested/refinements made at this stage?
- The authors mention a key limitation is that for ABI-Participate to be effective, specialist neuropsychological care would need to exist however these do not currently exist within the regional service provision. Given the logical next steps for developing the programme is feasibility testing, it would strengthen the paper if the authors could make suggestions for how ABI-Participate might be adapted into current regional service provision, or potentially specify which elements of the co-designed intervention can be implemented now vs implemented only if specialist services exist. This would be an important element additionally to have a sense of the costs associated with evaluating such an intervention.

#### Minor comments

- The TIDieR checklist is appended, however it does not seem to have been completed.

## VERSION 1 - AUTHOR RESPONSE

Authors responses to Reviewers comments		
<b>Reviewer 1 Taylor Jenkin</b>	<p>Congratulations on developing the ABI-P intervention, and integrating findings from your scoping review, mixed-methods work, co-design workshop, and theoretical modelling. It is clear that the authors have spent a great deal of time on this project, and it was a pleasure to read the manuscript. This manuscript provides an excellent example of how to integrate findings from a range of studies into intervention development. I am sure that the findings will be relevant and meaningful to readers. I look forward to reading the published version and sharing it with my rehabilitation colleagues. Well done!</p>	
1.	Some sections are quite cumbersome and it is sometimes difficult to follow the authors' flow of ideas. Consider re-wording particularly long sentences to increase readability, e.g.,	
	- P3, Lines 47-55 – "Findings from the workshop were analysed using the framework method and synthesized with previous findings using the BCW. The BCW and PBA guided the theoretical modelling of the intervention which included identifying guiding principles - highlighting key design objectives that were then mapped to intervention functions and behaviour change techniques, resulting in a logic model for the 'ABI-Participate' intervention."	<p>In text changes made to restructure sentences (page 2)</p> <p><i>'Findings from the workshop were analysed using the framework method and synthesised with previous findings using the Behaviour Change Wheel. Theoretical modelling enabled guiding principles to be identified and an intervention logic model to be produced.'</i></p>
	- P7, lines 41-50- "Once these have been identified, the BCW leads developers through a process identifying the components required for the intervention - intervention functions to target the behaviour and barriers, policies to support intervention delivery and behaviour change techniques, the specific strategies designed to change behaviour which are the active, observable, replicable and irreducible ingredient of an intervention – i.e., the proposed mechanism of change (32)"	<p>In text changes made to restructure this sentence (page 7)</p> <p><i>'Once these have been identified, the Behaviour Change Wheel leads developers through a process identifying the components required for the intervention. It aids identification of 'intervention functions' to target the behaviour and barriers and 'policies' to support intervention delivery. This leads to the selection of 'behaviour change techniques', specific strategies designed to change behaviour which are the active, observable, replicable and irreducible ingredient of an intervention – i.e., the proposed mechanism of change'</i></p>
	- P11, lines 49-55 – "This demonstrated the complexity of communication and referral routes from acute to community health services and between	<p>Changes made – page 12</p> <p><i>'The mapping demonstrated the complexity of communication and referral routes from acute to community health services, and between health, education</i></p>



	health, education and social care providers, the lack of provision or capacity of long-term specialist support services and collaborative care pathways.”	<i>and social care providers. Additionally, the lack of provision or capacity of long-term specialist support services and collaborative care pathways was clear.’</i>
2.	<p>Many sections are written in the passive voice, which can also make it difficult to follow the authors’ ideas. Consider how the active voice can be further used throughout to increase readability, e.g.,</p> <ul style="list-style-type: none"> <li>- P6, lines 23-25 – “This complexity makes them difficult to implement, with factors likely to affect implementation needing to be considered and addressed in their development.”</li> <li>- ‘A. Synthesis of relevant literature - Scoping Review’ section</li> </ul>	In text changes made on p6 and p10 and throughout paper.
3.	Please proof-read for typographical errors, e.g.,	
	- “The ‘ABI Participate’ (ABI-P) intervention aims to support CYP-ABI and their families <i>to</i> identify and address participation and wellbeing needs.”	Corrected
	- P24, lines 21-23 – “An additional element identified in our study, and by Gagnon and colleagues’ <i>[remove apostrophe here]</i> (46), was coaching and supporting CYP and families in identifying and achieving participation goals.”	Corrected
4.	The authors use a lot of acronyms throughout the manuscript, and some are unnecessary (i.e., those only used once). Reducing the amount of acronyms throughout might increase readability. Additionally, some acronyms are provided early in the manuscript, but are re-defined later.	Changes made throughout
5.	The authors refer to the TIDieR checklist, but it has not been completed.	Apologies, wrong document version was attached – please see correct version now attached.
6.	<b>Abstract</b>	

	- The acronym 'CYP-ABI' is used in the abstract but has not yet been defined.	Corrected
	- 'Children and young people' are referred to in the 'Participants' section. It would be helpful to include an age range here.	Added (5 - 18 years)
	- "Stakeholders identified potential solutions and intervention ingredients (such as the need for education for families and schools regarding long-term impact of ABI, and longer-term practical and emotional support for families)." – the brackets could be removed here.	Brackets removed
	- The Abstract could link more specifically to the findings. The novelty of this multifaceted intervention should be highlighted here. I've made a similar comment in the 'Conclusions' section.	Please see changes in Abstract on page 2/3
	The strengths and limitations are well articulated.	
7.	<b>Background</b>	
	- Page 5, Line 6 – The authors refer to 'young people', but it is unclear what this means. Do they mean adolescents, or young adults as well? Including the age range would be helpful.	Added 'under the age of 18' on page 4
	- Page 5, Lines 10-15 – "Outcomes within this population are heterogeneous with a range of influential factors such as injury severity, location, age at injury, premorbid abilities and personal, socioeconomic and environmental factors, e.g. family functioning (2, 3)." – should "e.g. family functioning" be in brackets here?	Brackets added page 4
	- The authors' rationale for this study is good. They briefly mention family impacts ("emotional impact on the whole family, including siblings") and highlight that "identifying and addressing individual family psychosocial and systemic issues is essential to ensure rehabilitation interventions can be	Additions made to background section to add further detail regarding these comments. Page 4 and 5



	<p>effective (4).” It would be great to see further discussion of the impacts of childhood ABI on families, and greater explanation of why it is important to consider the family context when working with children and young people with ABI. Why is identifying and addressing family psychosocial and systemic issues essential? Given that this intervention focuses on CYP and families, this rationale needs to be stronger.</p>	
	<p>- The authors describe developing an intervention to increase participation and wellbeing for CYP and their families. I'm unsure what family participation looks like in this context. This could be described more explicitly in the Introduction.</p>	<p>Additions made page 4 beginning '<i>The impact of a CYP sustaining an ABI on the family is well documented...</i>'</p>
8.	<p><b>Theoretical frameworks</b>            This section is well-written and clear – well done integrating so many frameworks!</p>	
	<p>- Page 9, line 9 – The authors refer to 'stakeholders' throughout this section and state "It ensures that the views of individuals who will interact with the intervention (i.e. key stakeholders) are included throughout..." – it would be helpful to detail who these stakeholders are in the current study (i.e., CYP, parents, community stakeholders).</p>	<p>Page 9 - Added '<i>such as CYP, parents, health, education, social care and charity practitioners</i>'</p>
9.	<p><b>Methods and Results</b>            It is helpful to see the Methods and Results integrated. This section clearly describes the many stages to the intervention development process. Well done.</p>	
	<p>- P11, Line 10 - The acronym 'HRQoL' has not been defined.</p>	<p>Amended</p>
	<p>- P11, lines 13-14 - "Relationships were found between CYP participation and HRQoL and parental HRQoL and family functioning." – This could be more specific. What was the nature of these relationships</p>	<p>Page 11 - Added more detail – '<i>Relationships were found between CYP and parental outcomes. Higher CYP participation and HRQoL was related to higher parental HRQoL and family functioning. Higher levels of parental anxiety/depression were related to lower CYP participation and parental HRQoL and family functioning.</i>'</p>
	<p>P12 – The 'D. Synthesis of findings' section is well written and provides an excellent summary of previous sections. The numbered list of key issues is particularly useful.</p>	
	<p>- P12, lines 7-10 - "... the findings of the literature review and mixed-methods research were</p>	<p>References added and wording amended on page 12 '<i>...using the Framework Method of analysis to map the findings and</i></p>

	collated and synthesised using the framework method of analysis and the ICF, COM-B and TDF.” – What is the ‘framework method of analysis’? I can see that you’ve provided citations on P14, line 29-30 – these could be included on P12 as well.	<i>themes to the ICF, COM-B and Theoretical Domains Framework (42, 43)’</i>
	- P12, line 52 – Authors state “A complex intervention was required...” – what is meant by ‘complex’? Does this mean multi-faceted, or something else?	Amended to multifaceted throughout
	The authors’ description of the co-design process is excellent.	
	- P14, lines 30-34 – “The findings and themes were discussed with the research team and study steering group to validate coding and ensure rigour.” - how did this process ensure rigour?	Page 14/15 - Wording amended to ‘ <i>The findings and themes were discussed with the research team and study steering group to ensure rigour by reviewing and triangulating the findings, validate the coding and reduce potential biases.</i> ’
	- P18, line 6 – The authors refer to the ‘intervention objectives’ – are these the key issues identified in the mixed methods study? This could be more explicit.	Wording amended to clarify and ensure consistency in wording on p15, p18 and table 3. - ‘ <i>These detail the key issues to be addressed, and the <b>intervention design objectives</b> and distinctive features that are key to successfully addressing these (Table 3).</i> ’
	- P18, line 50 – “The guiding principles combined with the behavioural analysis enabled a detailed intervention plan to be added to the guiding principles table” – What does ‘behavioural analysis’ mean here?	Page 18 - Amended wording to aid clarity – ‘ <i>The guiding principles combined with the identification of behaviour change techniques and intervention enabled a detailed intervention plan to be added to the guiding principles table (Table 3).</i> ’
10.	<b>Discussion</b> The first paragraph of the Discussion nicely summarises the project.	
	- A lot of detail is included in the second paragraph of the Discussion, highlighting the complexity and strengths of the ABI-P intervention. The authors could make stronger links to existing interventions and previously published literature, e.g., what makes this intervention different to others that have been developed in paediatric ABI?	Page 23 - Amendments made beginning ‘ <i>It is multi-faceted, family-centred, tailored to developmental stage, individual needs and contexts, and follows a rehabilitation process of assessment, goal setting, intervention delivery, monitoring and review (23). Based on a case coordination model,....</i> ’

	<p>- P23, lines 28-39 – “It is family-centred, tailored to individual needs and contexts and follows a rehabilitation process of assessment, goal setting, intervention delivery, monitoring and review (19). It includes elements of existing case management, coordinator, or patient navigator interventions. It also includes a therapeutic element of goal-oriented coaching. Both of which have been used in other health populations, including adults with TBI and CYP with neuro-disabilities (43, 44).” – Consider how the final sentence could be re-worded to remove the ‘Both of which’ at the beginning of the sentence.</p> <p>-</p>	<p>Wording amended to <i>‘It follows a case coordination model and includes a therapeutic element of goal-oriented coaching...’</i></p>
	<p>- It would be great if the authors could reflect on childhood ABI occurring within a developmental period and how the ABI-P intervention could tailor to developmental stage.</p>	<p>Page 23 and 24 - Wording aided to reflect developmental stage needs would be considered  <i>‘ABI-Participate could be used flexibly and at different time points, recognising that needs differ at different developmental stages (e.g. the need for more intensive support during educational transitions, particularly into secondary school).’</i></p>
	<p>- P23, lines 32-33 – The term ‘patient navigator’ is used. What does this mean?</p>	<p>This term is used alongside case manager, care coordinator etc and within the WHO recommendations. Removed for clarity</p>
	<p>- The authors refer to a systematic review conducted by Ogourtsova et al. Provide more information on what this systematic review was about. Could this be referred to in the Introduction as well?</p>	<p>Page 3 - Additions made within Introduction  <i>‘Additionally, sudden health literacy needs, increased caregiver burden, parental stress and financial hardship can impact the mental and emotional health of the whole family, including siblings (2, 20, 21)’</i></p> <p>Page 24 – Additions made within Discussion.  <i>‘Ogourtsova et al’s (21) systematic review of health coaching for parents of children with developmental disabilities found...’</i></p>
	<p>- P25, lines 3-8 – “... the effectiveness of these on CYP and parental outcomes, recognising that these are linked with CYP outcomes improving when parent-related outcomes improve.” – this is a great point and should be raised in the</p>	<p>Page 4/5 - Added to the introduction  <i>‘Rehabilitation interventions must consider the needs of the whole family, recognising the interconnectedness of family members and that addressing the needs of the parents may improve CYP outcomes (21).’</i></p>

	Introduction section as part of the rationale for why family interventions are important.	
	- P25, lines 7-27 – The relevance of this section (starting with “Novak et al’s...”) to the current study is unclear.	Aimed to draw on ability to use interventions found to be effective in other populations. Page 24 - Amended beginning <i>‘Existing interventions could be used within ABI-Participate. For example, goal-directed interventions (e.g. PREP - Pathways and Resources for Engagement and Participation), coaching interventions (e.g. CO-OP....’</i>
	- P25, lines 44-46 – “A future feasibility study should include exploration of both its acceptability and use and the impact of digital exclusion.” – What does ‘digital exclusion’ mean?	Page 25 - Amended to <i>‘as well as how to deliver this to those without access to the internet.’</i>
	- The ‘Future directions’ section provides excellent ideas for next steps with the ABI-P intervention.	
11.	<b>Conclusions</b> - The ‘Conclusions’ section could link more specifically to the findings. The novelty of this multifaceted intervention should be highlighted here (and in the abstract)!	Please see in-text changes on page 27 and in abstract
12.	<b>Tables/Figures/Supplemental Appendices</b> - Table 1 – this table is excellent and helps the reader to follow your ‘Theoretical frameworks’ section - Table 2 – This table provides an excellent summary of this work. It is clear that a lot of time and effort went into this project. Well done!	
	- Table 4 – The term ‘3rd sector’ is used – what does this mean?	Changed to voluntary/third sector. Third sector is a term used in the UK which includes voluntary or charity services as well as community and social groups)
<b>Reviewer 2 Andrea Kusec</b>	This paper describes the co-design and development of wellbeing intervention for children and young people with an ABI and their family members. The study used a combination of methodologies to map a logic model for an ABI-Participate intervention focused on education on ABI and practical and emotional support. Overall, the paper is well-structured and written clearly, with strong co-design elements to justify the ABI-participate intervention. I have some specific comments, as below.	
1.	- The introduction would benefit from covering the type and range of ABIs and any relevant evidence about participation changes in childhood ABI. The	Page 4 – Added <i>‘as a result of trauma or non-traumatic causes (e.g. infection, stroke, tumour)’ to provide definition of ABI to include traumatic and non-traumatic causes.’</i>

	<p>authors refer to other articles; methods but for readers it would be helpful to at least understand the author's definition of ABI, the type of ABIs included in all elements of the intervention development, and where relevant include any different intervention elements that differed by type of ABI.</p>	<p>Page 4 - Added for clarity <i>'participation in activities at home, school and the community'</i> Page 6 - Added to aim <i>'all causes and severities'</i>.</p>
2.	<p>- Related to the above, in the development of the intervention how were needs based on different kinds of ABIs considered? Potentially, depending on the type of ABI intervention elements such as transition to adult care may vary substantially (e.g., integration into a head injury vs stroke service), or for example in the type of education provided to schools (e.g., training on overlapping and non-overlapping needs of across a range of ABIs)</p>	<p>The development of the intervention was needs based rather than ABI diagnosis based.</p> <p>UK paediatric neurorehab services serve all causes of ABI. The intervention includes a range of elements that enable bespoke packages to be developed based on the individual needs of the CYP and family and the context and adaptable to local service provision.</p>
3.	<p>- Given the complexity of the intervention involving multiple roles, I wondered if through their co-design work the authors considered which professional roles might be best suited to implementing the intervention, or if this was a point of discussion in the co-design work – for example, who would be best placed to act as a liaison between services across sectors in providing social support/enablement elements of the intervention? NHS staff, charity workers, contracting a private sector? The authors mentioned that the intervention requires “skilled health/social care professional knowledgeable in ABI trained in intervention components” but it is currently not clear when implementing the intervention where researchers could first identify such individuals. Identifying roles best placed for such a complex intervention would aid in concretising its implementation.</p>	<p>This wasn't overtly discussed within the co-design workshop described in this paper, although was considered by the research team and study steering group. We deliberately didn't specify a professional but rather left it to be based on their skills and knowledge. However, having this role based within the acute neurorehabilitation team would enable effective communication between acute and community providers and educational settings in planning discharge home, return to school and planning of ongoing care and rehabilitation. This will be further explored developed prior to feasibility testing. A sentence has been added to reflect the ongoing refinement of the intervention Page 26 - <i>'This intervention has been developed iteratively, with CYP, parents and stakeholders. Further stakeholder and patient and public representative consultation and expert consensus development workshops are now required to refine, specify and confirm intervention components prior to feasibility testing.'</i></p>
4.	<p>- Was the final logic model reviewed/finalised with participants involved in the co-</p>	<p>Added to page 20 – <i>'This was developed iteratively, through review with the research team, study</i></p>

	design studies prior to its development? If yes, were any changes suggested/refinements made at this stage?	<i>steering group and patient and public representative, and refinements made.'</i> Page 26 – additions also made to limitations section – <i>'This intervention has been developed iteratively, with CYP, parents and stakeholders. Further stakeholder and patient and public representative consultation and expert consensus development workshops are now required to refine, specify and confirm intervention components prior to feasibility testing.'</i>
5.	- The TIDieR checklist is appended, however it does not seem to have been completed.	Apologies, wrong document version was attached – please see correct version now attached.