

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	A qualitative investigation of the perceptions and experiences of nursing and allied health professionals involved in the implementation of an enriched environment in an Australian acute stroke unit
AUTHORS	Rosbergen, Ingrid; Brauer, Sandra; Fitzhenry, Sarah; Grimley, Rohan; Hayward, Kathryn

VERSION 1 – REVIEW

REVIEWER	Liz Tutton Warwick Medical School University of Warwick UK
REVIEW RETURNED	10-Jul-2017

GENERAL COMMENTS	<p>This paper is a well written exploration of the findings from 10 interviews with staff who were involved in an intervention to change practice.</p> <p>The main weakness is a lack of methodological focus within which to frame and direct the study. This makes it hard to judge the contribution of the paper to existing knowledge. The study is presented as a pragmatic exploration of staff views of a multifaceted intervention to increase activity levels on a stroke unit. Process evaluation is mentioned but not explored. Rigour is linked to the reduction of bias rather than more qualitative approaches such as trustworthiness. The findings have many real insights into how the changes are/are not working and the reality of daily ward life. Further information about the elements within this intervention, their evolution from the mice studies to the ward situation, how practical/useful each element is from both staff and patient/family perspectives and what the important outcomes are for all stakeholders would have been useful. Shared mealtimes for example is a complex activity which could lead to positive or negative patient/staff experiences even if activity is increased. In addition knowing the existing ways of working on the unit would help to place the changes within the context of the unit. The main paper provides clues to this suggesting that patient/family involvement is low, therapist's work independently undertaking 30 minute interventions and don't work weekends, geographical space is poor and acuity is high. The findings do highlight the contextual challenges of staff changes, lack of team work and leadership.</p> <p>There are many elements of this intervention and it is unclear which elements might work better than others. I am also mindful of the</p>
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	<p>complex ways of working in different teams and how when valuing certain activities other work gets left undone. The role of individualised care, emotional work and user involvement in recovery from stroke might be useful concepts from which to explore this intervention. Theories of change might also provide a theoretical framework for the study. A good deal of work has gone into this study. Well done.</p>
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REVIEWER	<p>Felicity Bright Centre for Person Centred Research School of Clinical Sciences Auckland University of Technology</p>
REVIEW RETURNED	<p>15-Jul-2017</p>

GENERAL COMMENTS	<p>Thank you for the opportunity to review this manuscript, reporting a study of staff perceptions of providing an enriched acute stroke environment. The study is a robust qualitative descriptive study and is generally well-reported.</p> <p>While the manuscript meets the criteria of the BMJ Open checklist, there are some minor comments which the authors may wish to address:</p> <ol style="list-style-type: none"> 1. The manuscript would benefit from a closer edit to remove redundancy. For instance, the first sentence could read 'An enriched environment aims to enhance physical, social and cognitive activity ...' There are a number of instances where sentences could be refined to provide clarity (e.g page 23, line 38 'Staff perceived that ...') Another example is page 15, line 44, sentence beginning 'staff elaborated ...'. The use of 'elaborated' is perhaps not correct; it may be more appropriate to say 'staff perceived that the enriched environment ...' This also reflects that causality cannot be determined based on staff perceptions. The causal language throughout the paper may best be reviewed (e.g. page 16, line 24, 'the enriched environment improved psychological well-being' - while a different methodological approach might enable such a causal connection to be made, it is not appropriate to make this connection using a qualitative descriptive approach. 2. There is no discussion about seeking patient or family perceptions. It is interesting that this is not acknowledged in the second paragraph in the Background section. I suggest their experiences are important, and plans for exploring their perceptions (or justification for not doing so) should be briefly detailed. 3. While paragraph 3 of the Background highlights particular challenges in the acute stroke unit, it does not detail why these might be issues for providing an enriched environment (e.g. the heightened emotional state). 4. Page 7, line 55 appears to identify the locality of the study. I am unsure if this is appropriate. 5. Within the data collection section, the authors refer to the "enriched environment recruitment phase". It is unclear what this relates to. A sentence to clarify this would be beneficial. 6. Further explanation for sampling decisions would be useful. It is notable that the two allied health therapists were both senior
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	<p>therapists.</p> <p>7. There are some methodological inconsistencies noted, given that the study used Braun and Clark's approach to thematic analysis (ref 13). For instance, the claim that themes 'emerged' is not consistent with their approach which makes the researcher's role in identifying and determining themes explicit, and is best reflected in language such as 'sub-themes were identified' or 'were constructed'.</p> <p>8. It would be good to see discussion about whether an enriched environment must be meaningfully stimulating, or just stimulating. This is alluded to in the results section (e.g. page 18 line 13 and in the discussion - page 29, line 55)) but is important to consider in light of goal-setting research which emphasises the importance of meaningful goals and activities.</p> <p>9. The comments about teamwork are interesting. Were there any comments about how positive teamwork was facilitated?</p> <p>10. While there is discussion about the need to educate family of the benefits of an enriched environment, there is no discussion of why families might struggle to be engaged - perhaps emotionally or because of a tension in roles (therapist vs. support vs. carer). More critical consideration of why family involvement is complex and need approaches beyond education would be beneficial.</p> <p>11. At times, the discussion is a repetition of results rather than a critical discussion (e.g. paragraph on page 32, line 31 on).</p>
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REVIEWER	Sarah EP Munce, PhD Toronto Rehabilitation Institute-University Health Network; Toronto, Ontario, Canada
REVIEW RETURNED	20-Jul-2017

GENERAL COMMENTS	<p>Abstract The objective statement in the Abstract should be the same as it is written in the Background section or vice versa. Furthermore, under the author guidelines for BMJ Open, it is indicated that, "a section, placed after the abstract, consisting of the heading 'Strengths and limitations of this study', and containing up to five short bullet points, no longer than one sentence each, that relate specifically to the methods" should be included. The included limitation relates to the methods but the included strengths of the study do not, and therefore need to be revised.</p> <p>The type of staff interviewed should be reflected in the title of the article e.g., nurses' and allied staff's perspectives...</p> <p>Background I recommend a better transition between the first and second paragraph. The clause, "While an intervention can be clinically beneficial..." seems generic and is a weak link between describing an enriched environment and the need to understand a staff perspective in delivering an intervention. The first sentence of paragraph two could be even be eliminated.</p>
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Page 6; Line 47- the sentence beginning with “This highlights a possible disconnect between the value...” reads awkwardly and should be revised.

The authors indicate that “the enriched environment intervention was tailored to the unique context...” The authors should provide some details on how the intervention was tailored (see note below about including a description of the intervention in the Background section versus the Methods section).

Page 7; Lines 11-18 – The sentence beginning with “Here, patients are more dependent on staff...” and the sentence after this both require references.

Methods

The authors indicate in the Abstract that a descriptive qualitative approach was adopted but this is not indicated in the Methods section. This should be included as well as the rationale for adopting this specific approach. It would also be helpful if the authors provided a sub-heading for this section – e.g., “Overview of Design”.

Page 8; Line 13 – A “the” needs to be inserted in front of “Principal Investigator”. Can the authors provide a rationale for why the principal investigator did not participate in any of the interviews (especially for a study that is part of her PhD)? Was this because she had a professional relationship with all the participants, as indicated? If so, this should be underscored in this section.

Page 9; Line 3 - Note that sex should be used instead of gender (throughout).

Data Collection section – it is unclear what the authors mean by “the enriched environment recruitment phase”. This speaks to the need for the details of the intervention to be included much earlier in the paper (i.e., it should be included in the Background section rather than the Methods section). Furthermore, the average length of the interviews should be provided.

Page 11 – Enriched environment intervention section - For consistency purposes, Point 3 should start with “Encouraging” rather than “Encourage”.

It is unclear whether or not the authors perceived that saturation was achieved. This should be underscored.

The authors should include a specific rationale for selecting thematic content analysis.

RESULTS

The first section of the Results should have a sub-heading “Overview of Results” and include all of the themes and sub-themes.

Page 13; Line 35 – The authors should use “did not” versus didn’t. Participant’s should read as Participants’.

Again, gender should be replaced with sex.

	<p>Subjects should be replaced with participants.</p> <p>The themes as they read in the sub-headings and in the Abstract should be replaced with the themes labels as they appear in Table 3 (i.e., they are much clearer as they appear in Table 3). Again in Table 3, could the authors provide some examples under the sub-themes, especially for the sub-themes of impact on workload, challenging moments or provide more specific sub-themes?</p> <p>It is suggested the authors provide more than one representative quote for each of the themes/sub-themes. Furthermore, it would be helpful if the authors could provide at least one descriptor along with the quote e.g., type of staff member.</p> <p>Page 17; Line 16 – Under “Observed increased activity levels” – the phrase “listened to each other’s journeys” is a little “colloquial” and should be replaced with more specific information.</p> <p>Page 19; Line 45 – Under “It takes a team” – the phrase “on board” again seems rather colloquial and should be replaced.</p> <p>Page 21 – Line 11 – Again, “did not” should replace didn’t. References throughout the Results section to “comments” should be eliminated – these are data not comments e.g., Rather than “Allied staff didn’t make any comments on impact on workload during interviews”, the authors could write “Implementing the enrichment strategy did not appear to impact the workload of allied staff”.</p> <p>Page 21; Line 40 – Under the “Team dynamics” section, it is unclear what “changed the dynamics of knowledge within the team” means.</p> <p>Page 22; Line 31 – The sentence starting with “In contrast, on weekends...” reads awkwardly and should be revised.</p> <p>Page 23; Line 21 – this should read as a “lack of” versus “lack in”.</p> <p>The authors should identify/emphasis areas/themes where there was overlap e.g., did more motivated staff members (as reported on in the team dynamics sub-theme) take it upon themselves to learn about the enrichment strategy? Furthermore, did participants report on the importance of team education as it relates the sustainability of the enrichment strategy (i.e., not just the implementation of the intervention)?</p> <p>Page 24; Line 35 – the word confessed here sounds awkward and should be replaced. Furthermore, references to felt (e.g., staff felt that...) should be replaced with “perceived”.</p> <p>Page 25 – “slide back into their old habits” sounds colloquial and should be replaced.</p> <p>The sub-theme of “challenging moments” needs to be replaced with another label as it is too generic.</p> <p>DISCUSSION</p> <p>The first sentence of the Discussion should be removed and seems a little far-reaching especially given the challenges identified.</p> <p>Page 29; Line 27 – “Teamwork was perceived as a key-contributing</p>
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	<p>factor for successful embedding...” – the dash between “key contributing” needs to be removed and the sentence as a whole reads awkwardly/should be revised.</p> <p>Page 30; Line 56 – “Reports confirm that a perception of collective efficacy...” – the word “reports” should be replaced/removed.</p> <p>Page 31; Lines 11-16 – This sentence needs to be revised as it is unclear what “established team construct” refers to.</p> <p>Page 31 – The authors would benefit from a more in depth discussion of how champions facilitate the implementation (and sustainability) of complex interventions (in stroke care). Furthermore, a recent qualitative study from our team has indicated the important role of self-selected facilitators to implementation efforts (Munce et al., 2017; “Perspectives of health care professionals on the facilitators and barriers to the implementation of a stroke rehabilitation guidelines cluster randomized controlled trial”). Given your findings on intrinsic motivation, I’m wondering whether these findings might also be of interest/relevance to your study.</p> <p>The authors’ discussion of the allied health staff’s difficulties to incorporate the intervention due to time could also benefit from some revisions and consultation with frameworks that discuss barriers/facilitators to implementation of complex interventions e.g., Clinical Practice Guidelines Framework for Improvement.</p> <p>Page 33; Line 19 – It is unclear what the authors are referring to with respect to “social constructs” – this reference would benefit from some examples.</p> <p>Page 33; Line 21 “optim3ally” is spelt wrong.</p> <p>The authors indicate that a strength of the current study was the involvement of staff from a variety of disciplines; however, only nursing and allied staff were included. Thus, this is not perceived as a strength of the current study.</p> <p>The authors should use applicability rather than generalizability as this is a qualitative study.</p> <p>Lastly, the authors mention that the primary results have been previously published. The current paper should link the results of these two papers e.g., how can the current results be used to explain the outcomes observed in the pilot study?</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1 Dr Liz Tutton

We sincerely wish to thank you for your detailed comments and suggestions for this paper.

Comments

This paper is a well written exploration of the findings from 10 interviews with staff who were involved in an intervention to change practice.

Comment 1:

The main weakness is a lack of methodological focus within which to frame and direct the study. This makes it hard to judge the contribution of the paper to existing knowledge.

Response:

We have included a paragraph 'overview of design' in the method section, which includes our rationale for our chosen qualitative methodology that was not described clearly in our original submitted manuscript. In addition, in our background section we have clarified the evolution of the enriched environment intervention from animal models to our enriched environment intervention to enable the reader to contextualise where to place our paper in the broader literature. We discussed findings of this study in the context of the one other paper (discussion section), which did also complete a qualitative exploration of staff perceptions of implementing an enriched environment, although this was in the subacute rehabilitation setting post stroke.

Comment 2:

The study is presented as a pragmatic exploration of staff views of a multifaceted intervention to increase activity levels on a stroke unit. Process evaluation is mentioned but not explored.

Response:

We have changed our title in as we focused in this sub-study on one component of process evaluation. We have not included patient and family perspectives (added as a limitation of this study to the strengths and limitation section). We think rewording the title to state 'qualitative evaluation' reflects more accurately our study design.

Comment 3:

Rigour is linked to the reduction of bias rather than more qualitative approaches such as trustworthiness.

Response:

We have included in the method section an overview of our used qualitative methodology and elements of trustworthiness. In addition, we have described how we enhanced trustworthiness during data analysis in the data analysis section.

Comment 4:

The findings have many real insights into how the changes are/are not working and the reality of daily ward life. Further information about the elements within this intervention, their evolution from the mice studies to the ward situation, how practical/useful each element is from both staff and patient/family perspectives and what the important outcomes are for all stakeholders would have been useful. Shared mealtimes for example is a complex activity which could lead to positive or negative patient/staff experiences even if activity is increased.

Response:

We have expanded our background section to clarify the evolution of the enriched environment concept from animal models to human stroke population to provide a clearer picture for the reader. Furthermore, we have included a succinct section on the key elements of our enriched environment intervention in the background section. In our results section we have described how staff perceived different elements of the intervention (negative and positive) when these experiences or perceptions were expressed by staff. Staff did not report how practical/ useful each element was, so we are unable to comment on this aspect. Additionally, in this paper we are not presenting patient/family perspectives.

Comment 5:

In addition knowing the existing ways of working on the unit would help to place the changes within the context of the unit. The main paper provides clues to this suggesting that patient/family involvement is low, therapist's work independently undertaking 30 minute interventions and don't work weekends, geographical space is poor and acuity is high. The findings do highlight the contextual challenges of staff changes, lack of teamwork and leadership.

Response:

We have considered and discussed describing usual care in this paper. To respect word count limits indicated by BMJ we have included a sentence in our method section paragraph on enriched environment intervention that makes a reference to our previous published paper regarding usual care.

Comment 6:

There are many elements of this intervention and it is unclear which elements might work better than others. I am also mindful of the complex ways of working in different teams and how when valuing certain activities other work gets left undone. The role of individualised care, emotional work and user involvement in recovery from stroke might be useful concepts from which to explore this intervention. Theories of change might also provide a theoretical framework for the study. A good deal of work has gone into this study. Well done.

Response:

In the resubmitted paper, we have clarified which elements of our intervention were perceived or experienced to work well amongst staff when data was available. In addition, thank you for your advice regarding including individualisation. In our enriched environment intervention we aimed to enhance meaningful activities for individuals. We have included in our discussion section that future goal setting could further enhance individualized care. Furthermore, we also expanded that user involvement (patient and family) is complex and that utilizing a theory of change model, exploring barriers and enablers perceived by staff, patients and families could promote further understanding of how to facilitate family involvement.

Reviewer 2 Dr Felicity Bright

We sincerely wish to thank you for your detailed comments and suggestions for this paper.

Comments:

The study is a robust qualitative descriptive study and is generally well-reported. While the manuscript meets the criteria of the BMJ Open checklist, there are some minor comments, which the authors may wish to address.

Comment 1:

The manuscript would benefit from a closer edit to remove redundancy. For instance, the first sentence could read 'An enriched environment aims to enhance physical, social and cognitive activity ...'

Response:

We have edited the manuscript and believe we have reduced redundancy.

Comment 2:

There are a number of instances where sentences could be refined to provide clarity (e.g page 23, line 38 'Staff perceived that ...') Another example is page 15, line 44, sentence beginning 'staff

elaborated ...'. The use of 'elaborated' is perhaps not correct; it may be more appropriate to say 'staff perceived that the enriched environment ...' This also reflects that causality cannot be determined based on staff perceptions. The causal language throughout the paper may best be reviewed (e.g. page 16, line 24, 'the enriched environment improved psychological well-being' - while a different methodological approach might enable such a causal connection to be made, it is not appropriate to make this connection using a qualitative descriptive approach.

Response:

We have checked the paper for causal language and edited wording to address your concerns.

Comment 3:

There is no discussion about seeking patient or family perceptions. It is interesting that this is not acknowledged in the second paragraph in the Background section. I suggest their experiences are important, and plans for exploring their perceptions (or justification for not doing so) should be briefly detailed.

Response:

We have changed our title to better reflect our study design, which was a qualitative staff evaluation. We agree that patient and family perspectives are a very important part of process evaluation of a new intervention. Our research team wanted first to explore staff experiences and perception as the enriched environment was a complex multifaceted intervention and required staff to change work practices in the acute stroke unit within existing staffing levels. At the time of embedding a new intervention and establishing recruitment of participants we were unable to include interviews with patients and families as well. We have included in the strength and limitation section that we have not explored patient and family perceptions and experiences as a limitation.

Comment 4:

While paragraph 3 of the Background highlights particular challenges in the acute stroke unit, it does not detail why these might be issues for providing an enriched environment (e.g. the heightened emotional state).

Response:

We have expanded and clarified the particular challenges in the acute stroke unit and how they impact on the concept of an enriched environment. We have included references regarding acute stroke unit characteristics.

Comment 5:

Page 7, line 55 appears to identify the locality of the study. I am unsure if this is appropriate.

Response:

It is indeed possible to identify locality from ethics and funding bodies. We have maintained locality per BMJ open submission guidelines, which request to specify names.

Comment 6:

Within the data collection section, the authors refer to the "enriched environment recruitment phase". It is unclear what this relates to. A sentence to clarify this would be beneficial.

Response:

We have included in our methods section a 'study background' paragraph. This paragraph clarifies the different recruitment periods: usual care period and enriched environment period and describes that semi-structured interviews were conducted 8-weeks post the enriched environment period.

Comment 7:

There are some methodological inconsistencies noted, given that the study used Braun and Clark's approach to thematic analysis (ref 13). For instance, the claim that themes 'emerged' is not consistent with their approach which makes the researcher's role in identifying and determining themes explicit, and is best reflected in language such as 'sub-themes were identified' or 'were constructed'.

Response:

We have included a new paragraph 'overview of design' in our methods to clarify our methodology. Furthermore, we have checked the manuscript and edited inconsistencies in wording to align the paper with a descriptive thematic approach.

Comment 8:

It would be good to see discussion about whether an enriched environment must be meaningfully stimulating, or just stimulating. This is alluded to in the results section (e.g. page 18 line 13 and in the discussion - page 29, line 55)) but is important to consider in light of goal-setting research which emphasises the importance of meaningful goals and activities.

Response:

Unpacking a complex intervention is challenging. There is no evidence in human studies to guide a discussion on the importance of whether the environment is meaningfully stimulating, thus we have not concentrated on this issue. However, we aimed to enhance meaningful stimulating activities for individuals as this is recommended in current stroke rehabilitation evidence. In our discussion section we have included that future early goal setting with patients and families could further strengthen meaningful activities for each individual.

Comment 9:

The comments about teamwork are interesting. Were there any comments about how positive teamwork was facilitated?

Response:

We have included experiences and perceptions from staff where staff eluded on positive team work in the result section. It appeared that the enriched environment made the team more visible to keep patient care running smoothly as more regular communication between disciplines was required enhancing teamwork. (Section results; Theme 'it takes a team') In addition, nursing staff felt supported in their workload by allied health during structured mealtimes. (Section results; Theme 'it takes a team', Subtheme 'impact on workload') Leadership and consistency in staff was also recognized to enhance teamwork. (Section results, Theme 'keeping it going', Subtheme 'sustainability')

Comment 10:

While there is discussion about the need to educate family of the benefits of an enriched environment, there is no discussion of why families might struggle to be engaged - perhaps emotionally or because of a tension in roles (therapist vs. support vs. carer). More critical consideration of why family involvement is complex and need approaches beyond education would be beneficial.

Response:

We have clarified in the discussion section that involvement of patients and families is multifactorial. We expanded that utilizing a theory of change model could enhance understanding what barriers are

experienced by staff, patients and families, and that in-depth exploration how to promote family involvement is needed to build a pathway forward.

Comment 11:

At times, the discussion is a repetition of results rather than a critical discussion (e.g. paragraph on page 32, line 31 on).

Response:

We have deleted lines in our discussion what were a repetition of results.

Reviewer 3 Dr. Sarah EP Munce

We sincerely wish to thank you for your detailed comments and suggestions for this paper.

Comments to section: Abstract

The objective statement in the Abstract should be the same as it is written in the Background section or vice versa.

Response:

We have revised our paper to ensure the objective as stated in the abstract is consistent with the objective stated in the background.

Comment:

Furthermore, under the author guidelines for BMJ Open, it is indicated that, "a section, placed after the abstract, consisting of the heading 'Strengths and limitations of this study', and containing up to five short bullet points, no longer than one sentence each, that relate specifically to the methods" should be included. The included limitation relates to the methods but the included strengths of the study do not, and therefore need to be revised.

Response:

We have revised this section and included new strengths and limitations, altered previous submitted strengths and limitations and focused on methodology of this study.

Comment:

The type of staff interviewed should be reflected in the title of the article e.g., nurses' and allied staff's perspectives...

Response:

We have revised our title and included nursing and allied health professionals.

Our title now reads: How is the implementation of an enriched environment in an acute stroke unit perceived and experienced by nursing and allied health professionals: A qualitative evaluation

Comments to section: Background

I recommend a better transition between the first and second paragraph. The clause, "While an intervention can be clinically beneficial..." seems generic and is a weak link between describing an enriched environment and the need to understand a staff perspective in delivering an intervention. The first sentence of paragraph two could be even be eliminated.

Response:

We have deleted the first sentence as recommended. We have revised the background section and have emphasized the reason why we need a qualitative study to understand staff perspective in paragraph 4 and 5.

Comment:

Page 6; Line 47- the sentence beginning with “This highlights a possible disconnect between the value...” reads awkwardly and should be revised.

Response:

We have deleted the sentence and revised our background section.

Comment:

The authors indicate that “the enriched environment intervention was tailored to the unique context...” The authors should provide some details on how the intervention was tailored (see note below about including a description of the intervention in the Background section versus the Methods section).

Response:

In the background, paragraph 3 we have explained how we tailored the intervention to the acute setting. In addition, we have included a brief overview of key intervention elements in the background, paragraph 4 to provide a clearer picture for the reader.

Comment:

Page 7; Lines 11-18 – The sentence beginning with “Here, patients are more dependent on staff...” and the sentence after this both require references.

Response:

We have included references as recommended.

Comments to section: Methods

The authors indicate in the Abstract that a descriptive qualitative approach was adopted but this is not indicated in the Methods section. This should be included as well as the rationale for adopting this specific approach. It would also be helpful if the authors provided a sub-heading for this section – e.g., “Overview of Design”.

Response:

We have included an ‘overview of design’ subheading and included a rationale for the chosen descriptive qualitative approach.

Comment:

Page 8; Line 13 – A “the” needs to be inserted in front of “Principal Investigator”. Can the authors provide a rationale for why the principal investigator did not participate in any of the interviews (especially for a study that is part of her PhD)? Was this because she had a professional relationship with all the participants, as indicated? If so, this should be underscored in this section.

Response:

We have inserted ‘the’ in front of Principal Investigator.

We have underscored that we used an independent researchers to allow staff to honestly reflect on the intervention as the principal investigator had professional relationships with participants.

Comment:

Page 9; Line 3 - Note that sex should be used instead of gender (throughout).

Response:

We have revised gender to sex throughout the manuscript.

Comment:

Data Collection section – it is unclear what the authors mean by “the enriched environment recruitment phase”. This speaks to the need for the details of the intervention to be included much earlier in the paper (i.e., it should be included in the Background section rather than the Methods section). Furthermore, the average length of the interviews should be provided.

Response:

We have included in our methods section a subheading ‘study background’. This paragraph clarifies the different recruitment periods of our study: usual care period and enriched environment period and describes when semi-structured interviews were conducted. We have also included mean length of interviews (34.4 minutes) in the first paragraph of the result section.

Comment:

Page 11 – Enriched environment intervention section - For consistency purposes, Point 3 should start with “Encouraging” rather than “Encourage”.

Response:

We have revised the wording to ‘encouraging’.

Comment:

It is unclear whether or not the authors perceived that saturation was achieved. This should be underscored.

Response:

We have underscored saturation at the end of paragraph ‘participants’ in the methods section and have emphasized that participant recruitment was ceased upon saturation of the data.

Comment:

The authors should include a specific rationale for selecting thematic content analysis.

Response:

We revised our methodology explaining our rationale for use of a phenomenological approach, which enables collection of individual staff experiences and perceptions. Consistent with a phenomenological approach semi-structured interviews were undertaken with open-ended questions and probing to collect individual staff perceptions and experiences. Collected data was analysed to identify main themes. (Section methods, subheading ‘overview of design’)

Comments to section: results

The first section of the Results should have a sub-heading “Overview of Results” and include all of the themes and sub-themes.

Response:

We have added the subheading ‘overview of results’ in our result section.

Comment:

Page 13; Line 35 – The authors should use “did not” versus didn’t. Participant’s should read as Participants’.

Response:

We have revised to did not.

Comment:

Again, gender should be replaced with sex.

Response:

We have revised gender to sex.

Comment:

Subjects should be replaced with participants.

Response:

We have revised subjects to participants.

Comment:

The themes as they read in the sub-headings and in the Abstract should be replaced with the themes labels as they appear in Table 3 (i.e., they are much clearer as they appear in Table 3). Again in Table 3, could the authors provide some examples under the sub-themes, especially for the sub-themes of impact on workload, challenging moments or provide more specific sub-themes?

Response:

We have revised our abstract and used the themes and subthemes as they appear in Table 3. In Table 3 we have revised sub-theme 'challenging moments' to 'impacting contextual factors' and moved 'physical design of the unit' as it appeared to fit better with this sub-theme. We have outlined themes and subthemes in Table 3. We included an additional quote under 'impact on workload' to support our subtheme.

Comment:

It is suggested the authors provide more than one representative quote for each of the themes/sub-themes. Furthermore, it would be helpful if the authors could provide at least one descriptor along with the quote e.g., type of staff member.

Response:

We have revised our results section and added extra quotations to our manuscript to support themes and subthemes. In addition, we have provided a descriptor at the end of each quotation to contextualize who made the quote.

Comment:

Page 17; Line 16 – Under "Observed increased activity levels" – the phrase "listened to each other's journeys" is a little "colloquial" and should be replaced with more specific information.

Response:

We have revised our wording to reduce colloquial language.

Comment:

Page 19; Line 45 – Under "It takes a team" – the phrase "on board" again seems rather colloquial and should be replaced.

Response:

We have revised wording to reduce colloquial language.

Comment:

Page 21 – Line 11 – Again, "did not" should replace didn't.

Response:

We have revised wording as suggested.

Comment:

References throughout the Results section to “comments” should be eliminated – these are data not comments e.g., Rather than “Allied staff didn’t make any comments on impact on workload during interviews”, the authors could write “Implementing the enrichment strategy did not appear to impact the workload of allied staff”.

Response:

We have revised our results section and eliminated ‘comments’ and referred to the data in all circumstances.

Comment:

Page 21; Line 40 – Under the “Team dynamics” section, it is unclear what “changed the dynamics of knowledge within the team” means.

Response:

We have revised wording and eliminated ‘dynamics of knowledge’.

Comment:

Page 22; Line 31 – The sentence starting with “In contrast, on weekends...” reads awkwardly and should be revised.

Response:

We have revised wording as suggested.

Comment:

Page 23; Line 21 – this should read as a “lack of” versus “lack in”.

Response:

We have revised wording as suggested to ‘lack of’.

Comment:

The authors should identify/emphasis areas/themes where there was overlap e.g., did more motivated staff members (as reported on in the team dynamics sub-theme) take it upon themselves to learn about the enrichment strategy? Furthermore, did participants report on the importance of team education as it relates the sustainability of the enrichment strategy (i.e., not just the implementation of the intervention)?

Response:

We believe we have reported overlap when indicated by collected data. There were no data references indicating that motivated staff members learned themselves about enrichment strategies. Education and champions were emphasised to be important in different subthemes and this is reflected throughout the manuscript. In subtheme ‘sustaining work practices’ we reported that staff ‘repeatedly mentioned education and champions’ as an important factor to sustain work practice.

Comment:

Page 24; Line 35 – the word confessed here sounds awkward and should be replaced. Furthermore, references to felt (e.g., staff felt that...) should be replaced with “perceived”.

Response:

We revised wording as suggested by the reviewer.

Comment:

Page 25 – “slide back into their old habits” sounds colloquial and should be replaced.

Response:

We revised wording and reduced colloquial wording.

Comment:

The sub-theme of “challenging moments” needs to be replaced with another label as it is too generic.

Response:

We have re-discussed this subtheme between researchers and agreed that subtheme ‘challenging moments’ should be revised to ‘impacting contextual factors’ and revised text in this section accordingly.

Comments to section: Discussion

The first sentence of the Discussion should be removed and seems a little far-reaching especially given the challenges identified.

Response:

We have deleted the first sentence of the discussion section.

Comment:

Page 29; Line 27 – “Teamwork was perceived as a key-contributing factor for successful embedding...” – the dash between “key contributing” needs to be removed and the sentence as a whole reads awkwardly/should be revised.

Response:

We have revised the sentence as suggested.

Comment:

Page 30; Line 56 – “Reports confirm that a perception of collective efficacy...” – the word “reports” should be replaced/removed.

Response:

We have revised wording to ‘Previous research suggests...’

Comment:

Page 31; Lines 11-16 – This sentence needs to be revised as it is unclear what “established team construct” refers to.

Response:

We have revised this paragraph and explained team construct and added a reference to support.

Comment:

Page 31 – The authors would benefit from a more in depth discussion of how champions facilitate the implementation (and sustainability) of complex interventions (in stroke care). Furthermore, a recent qualitative study from our team has indicated the important role of self-selected facilitators to implementation efforts (Munce et al., 2017; “Perspectives of health care professionals on the facilitators and barriers to the implementation of a stroke rehabilitation guidelines cluster randomized controlled trial”). Given your findings on intrinsic motivation, I’m wondering whether these findings might also be of interest/relevance to your study.

Response:

We have read your paper with interest which described how self-selected facilitators enhanced implementation of the intervention. Consequently, we have added more in depth discussion on champions in our discussion section.

Comment:

The authors’ discussion of the allied health staff’s difficulties to incorporate the intervention due to time could also benefit from some revisions and consultation with frameworks that discuss barriers/facilitators to implementation of complex interventions e.g., Clinical Practice Guidelines Framework for Improvement.

Response:

We have clarified in the discussion section that involving patients and families is multifactorial. We expanded that utilizing a theory of change model could enhance understanding what barriers are experienced by staff and families, and that in-depth exploration how to promote family involvement is needed to build a pathway forward.

Comment:

Page 33; Line 19 – It is unclear what the authors are referring to with respect to “social constructs” – this reference would benefit from some examples.

Response:

We have revised our wording in this paragraph and have focused on team construct as teamwork was a main theme of our result. With respect to BMJ word limit we deleted ‘social construct’, as this term requires a definition and clarifying examples to relate to our study.

Comment:

Page 33; Line 21 “optim3ally” is spelt wrong.

Response:

This sentence has been deleted from our manuscript.

Comment:

The authors indicate that a strength of the current study was the involvement of staff from a variety of disciplines; however, only nursing and allied staff were included. Thus, this is not perceived as a strength of the current study.

Response:

We have revised our wording and included that our study used a representative sample of staff directly involved in the implementation of an enriched environment.

Comment:

The authors should use applicability rather than generalizability as this is a qualitative study.

Response:
We have revised suggested wording.

Comment:
Lastly, the authors mention that the primary results have been previously published. The current paper should link the results of these two papers e.g., how can the current results be used to explain the outcomes observed in the pilot study?

Response:
During the revision process we have outlined extra details regarding our intervention and pilot study to link the qualitative study to our pilot study. When data was available we have linked our qualitative results to our pilot study results such as the need for teamwork and benefits of change management strategies to successfully implement an enriched environment Furthermore, we emphasised intervention elements that were perceived to increase patient activity levels such as structured communal mealtimes and group activities.

VERSION 2 – REVIEW

REVIEWER	E.Tutton University of Warwick
REVIEW RETURNED	05-Sep-2017

GENERAL COMMENTS	<p>Thank-you for the developments that have been made on this paper which have improved the paper. A few additional points.</p> <p>i) One paragraph identifying Phenomenology as the methodology is a limitation as the methodology is not evident throughout the study, however notions of trustworthiness do help. I would either strengthen this or use generic principles of thematic analysis and associated rigour but highlight that the study was not underpinned by a specific methodology as a limitation of the study.</p> <p>ii) The study provides a useful description of the participants views of the change process but does not highlight any detailed analysis of the nature of the different elements of the intervention, what worked for whom in what circumstances. I would therefore be inclined to add this as a limitation and opportunity for further research. Maintaining an inquiring approach to the nature of the intervention, its strengths and weaknesses is useful.</p> <p>iii) The study supports existing literature on change management but does it extend what is already known? Is there anything specific to acute clinical, multidisciplinary areas that could be highlighted?</p> <p>iv) I would be inclined to say a purposeful sample was obtained as the sample is quite small for 'maximal variation'.</p>
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REVIEWER	Felicity Bright Auckland University of Technology New Zealand
REVIEW RETURNED	26-Sep-2017

GENERAL COMMENTS	<p>Thank you for the opportunity to review the resubmitted manuscript. I note that a number of changes have been made to strengthen the paper.</p> <p>There are several issues that need to be addressed.</p>
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	<p>1. Methodological. I note that this resubmitted manuscript states the study uses phenomenology. Yet, I can see no evidence of how this methodology has informed the study design, conduct and in particular, the analysis. A number of the aspects of the study conduct (such as saturation, interview structure, data analysis, concerns around personal bias, validity and rigour) are not overly congruent (if not actually incongruent) with this methodology. The study design appears consistent with a qualitative descriptive approach, as it was originally written up. I am always concerned when papers claim a methodology that is not apparent in how the study occurred.</p> <p>2. Presentation of findings. The findings have been re-presented to reflect that interview data only reflects a person's stated perception of a phenomenon. However, at times there is an overuse of 'perceived' when in fact the original language would suffice and would actually better reflect what is being discussed. For instance, on p17 line 32 - 'staff reported' is more accurate than 'staff experienced'</p> <p>3. Participant characteristics. I note the authors have changed 'gender' to 'sex'. It is generally more acceptable to use 'gender'.</p> <p>4. Word choices. I recognise this is rather pedantic, but at times the word choice is not entirely congruent with the context. For instance, p7, line 16 "daily administration". Is an enriched environment something 'administered' to people or is it perhaps more appropriate to select another word such as 'operationalised'? The use of 'drive' on p7 line 26 may perhaps be changed to 'select' or 'determine'.</p> <p>5. Close editing of text. There are a number of instances where close attention to word choice and grammar would enhance the readability of the transcript for instance, 'patients and carers involvement design' on p7 line 26; 'given the increased focus of nursing and AH staff ... ' (p7 line 31), 'experiences being involved' (p7 line 44), 'more .. happier' p17 line 27), 'perceived higher' (p18 line 14), the first sentence of theme three (p25, line 6), 'staff experienced that NAs were not sufficiently trained' (p27, line 21) - perhaps it is more correct to say that staff suggested, the sentence starting 'positive feedback (p28, line 14) is a complex sentence that would best be reworded, 'enhance focus on meaningful activities' (p32 line 49)</p> <p>6. Limitations. The researchers used saturation to determine when to stop data collection. This is recognised to be a problematic concept, and might bear some reflection in the limitations section.</p> <p>7. Repetition of information. There is repetition in how the enriched environment is discussed, in both the Introduction and Methods. This could be revised to reduce such repetition. This is also an issue in the first two paragraphs of the Discussion which are essentially a summary of the Findings.</p> <p>8. The Discussion primarily focuses on individual staff and teams and it may be strengthened by some further discussion about systems, recognising that these can be a significant factors in knowledge mobilisation and practice change.</p> <p>9. Clarification re statement on p35 line 19/21 re time spent with patients. Could this statement please be further clarified?</p>
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REVIEWER	Sarah Munce Toronto Rehabilitation Institute-University Health Network, Toronto, Ontario, Canada
REVIEW RETURNED	12-Sep-2017

GENERAL COMMENTS	<p>Thank you so much for the incorporating the suggested changes. I still recommend that the authors revise/simplify some of their sentences. There are still some awkward sentences/phrases throughout the paper – e.g., “provision of assistance”, “it is pertinent to explore”, etc. The suggested changes below are not comprehensive (i.e., please do a thorough proof-reading to simplify language throughout). Kindly check your reference list as well – 13 appears after 3, for example. I am otherwise pleased with the revisions.</p> <p>Background – 1st page - The sentence starting on ~line 35 – “Similar to animal models, both studies...” is a little awkward as these two studies have not been previously referred to.</p> <p>2nd page – “Patient and carers involvement design...” – this reads awkwardly and should be revised.</p> <p>Objective statement – suggest using understand versus evaluate (as this denotes a qualitative study).</p> <p>Suggest revising the last sentence of the Background e.g., clinical support to inform future clinical trial. Suggest “Staff reflections will contribute to the refinement of a model of environmental enrichment which will be evaluated in a future clinical trial” (if this is what you mean).</p> <p>Overview of design – suggest “how humans experience their world” rather than experienced.</p> <p>Given that the authors begin the Results section with an overview of the participants, I suggest the sub-heading, “Overview of Themes” versus “Overview of Results”.</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer 1 Dr Liz Tutton

We sincerely wish to thank you for your comments and suggestions for this paper.

Comments

Thank-you for the developments that have been made on this paper, which have improved the paper. A few additional points.

Comment 1:

One paragraph identifying Phenomenology as the methodology is a limitation as the methodology is not evident throughout the study, however notions of trustworthiness do help. I would either strengthen this or use generic principles of thematic analysis and associated rigour but highlight that the study was not underpinned by a specific methodology as a limitation of the study.

Response:

We have revised our methodology back to our original design of a descriptive qualitative approach, as suggested by reviewer one and two. We have maintained elements of trustworthiness and associated rigor. In addition, we have included in the limitation section that our study was not underpinned by a specific methodology.

Comment 2:

The study provides a useful description of the participant' views of the change process but does not highlight any detailed analysis of the nature of the different elements of the intervention, what worked for whom in what circumstances. I would therefore be inclined to add this as a limitation and opportunity for further research. Maintaining an inquiring approach to the nature of the intervention, its strengths and weaknesses is useful.

Response:

Our interview schedule did not include specific questions or prompts regarding the nature of the different elements of the intervention. We chose not to include such questions to enable participants to tell their own story about their role in the enrichment study. Our broad results do indicate that certain intervention elements were perceived easier to implement than others and that contextual factors may have influenced the elements adopted. We have followed your advice and included this limitation in the strength and limitation section, and suggested that future studies could address this issue.

Comment 3:

The study supports existing literature on change management but does it extend what is already known? Is there anything specific to acute clinical, multidisciplinary areas that could be highlighted?

Response:

In our opinion our study does not extend the knowledge on change management, as this was not the aim of our study. We used certain change management strategies to implement our intervention that have previously been shown effective in a study in a variety of acute stroke units (Middleton S. et al., Lancet 2011), and evaluated how this was perceived by staff to inform future translation. Staff did not identify new ways or alternatives strategies for future implementation hence no comments were made in that direction.

Comment 4:

I would be inclined to say a purposeful sample was obtained as the sample is quite small for 'maximal variation'.

Response:

We have revised the text to purposeful sample.

Reviewer 2 Dr Felicity Bright

We sincerely wish to thank you for your comments and suggestions for this paper.

Comments:

Thank you for the opportunity to review the resubmitted manuscript. I note that a number of changes have been made to strengthen the paper.

Comment 1:

Methodological. I note that this resubmitted manuscript states the study uses phenomenology. Yet, I can see no evidence of how this methodology has informed the study design, conduct and in particular, the analysis. A number of the aspects of the study conduct (such as saturation, interview structure, data analysis, concerns around personal bias, validity and rigour) are not overly congruent (if not actually incongruent) with this methodology. The study design appears consistent with a qualitative descriptive approach, as it was originally written up. I am always concerned when papers claim a methodology that is not apparent in how the study occurred.

Response:

We have revised our methodology back to our original design of a descriptive qualitative approach as suggested by reviewer one and two. We have maintained elements of trustworthiness and associated rigor. In addition, we have included in the limitation section that our study was not underpinned by a specific methodology.

Comment 2:

Presentation of findings. The findings have been re-presented to reflect that interview data only reflects a person's stated perception of a phenomenon. However, at times there is an overuse of 'perceived' when in fact the original language would suffice and would actually better reflect what is being discussed. For instance, on p17 line 32 - 'staff reported' is more accurate than 'staff experienced'

Response:

We have reconsidered our wording throughout the manuscript and included original wording in certain sentences to achieve a better balance between the suggestions of reviewer two and three.

Comment 3:

Participant characteristics. I note the authors have changed 'gender' to 'sex'. It is generally more acceptable to use 'gender'.

Response:

During the first review process reviewer three indicated a preference for 'sex'. In our opinion both wordings are acceptable. However, we have maintained 'sex' in the manuscript, as we did not ask participants how they wished to be identified. We welcome editorial guidance on journal preference.

Comment 4:

Word choices. I recognise this is rather pedantic, but at times the word choice is not entirely congruent with the context. For instance, p7, line 16 "daily administration". Is an enriched environment something 'administered' to people or is it perhaps more appropriate to select another word such as 'operationalised'? The use of 'drive' on p7 line 26 may perhaps be changed to 'select' or 'determine'.

Response:

We appreciate this feedback to enhance the quality of the manuscript. We have revised our wording to 'required that the embedded intervention was easy to modify'. The second comment on use of drive in 'drive their own activities' has been reworded to 'to encourage patient engagement in activities outside therapy hours.'

Comment 5:

Close editing of text. There are a number of instances where close attention to word choice and grammar would enhance the readability of the transcript for instance, 'patients and carers involvement design' on p7 line 26; 'given the increased focus of nursing and AH staff ...' (p7 line 31), 'experiences

being involved' (p7 line 44), 'more .. happier' p17 line 27), 'perceived higher' (p18 line 14), the first sentence of theme three (p25, line 6), 'staff experienced that NAs were not sufficiently trained' (p27, line 21) - perhaps it is more correct to say that staff suggested, the sentence starting 'positive feedback (p28, line 14) is a complex sentence that would best be reworded, 'enhance focus on m

Response:

We have reconsidered word choice and grammar regarding above mentioned sentences and revised accordingly.

Comment 6:

Limitations. The researchers used saturation to determine when to stop data collection. This is recognised to be a problematic concepts, and might bear some reflection in the limitations section.

Response:

We recognise that saturation is a difficult concept. We have included your suggestion in the limitation section, which reads: 'it appeared that data saturation was reached, but it is possible that a larger study sample could have led to additional perspectives raised.'

Comment 7:

Repetition of information. There is repetition in how the enriched environment is discussed, in both the Introduction and Methods. This could be revised to reduce such repetition. This is also an issue in the first two paragraphs of the Discussion which are essentially a summary of the Findings.

Response:

We have thoroughly reviewed the manuscript and did identify some circumstances of repetition. During the first revision process reviewer three requested more information regarding our intervention in the background to support the rationale of the intervention, which we have maintained. Other instances of repetitions have been removed to enhance readability. For example, the first two paragraphs of the discussion have been condensed to one paragraph.

Comment 8:

The Discussion primarily focuses on individual staff and teams and it may be strengthened by some further discussion about systems, recognising that these can be a significant factors in knowledge mobilisation and practice change.

Response:

We agree that system factors contribute to implementation. We have explained in the limitation section that this study was only undertaken in one site and have indicated that this will limit applicability of findings. Consideration of hospital systems is needed when this work expands across different locations, but is in our opinion beyond the scope of this single centre study.

Comment 9:

Clarification re statement on p35 line 19/21 re time spent with patients. Could this statement please be further clarified?

Response:

We have reconsidered this statement and have revised the statement to:

'Given patients spend little time with therapists in acute stroke units to start early rehabilitation, it is important to look at alternative strategies to promote activity after stroke.'

Reviewer 3 Dr. Sarah EP Munce

We sincerely wish to thank you for your detailed comments and suggestions for this paper.

Comments to section:

Thank you so much for the incorporating the suggested changes. I still recommend that the authors revise/simplify some of their sentences. There are still some awkward sentences/phrases throughout the paper – e.g., “provision of assistance”, “it is pertinent to explore”, etc. The suggested changes below are not comprehensive (i.e., please do a thorough proof-reading to simplify language throughout). Kindly check your reference list as well – 13 appears after 3, for example. I am otherwise pleased with the revisions.

Response:

We have considered and revised suggested sentences, and simplified language in certain passages. We checked the reference list: 13 appeared after 3, as this was the final page number of the third reference.

Comment:

Background – 1st page - The sentence starting on ~line 35 – “Similar to animal models, both studies...” is a little awkward as these two studies have not been previously referred to.

Response:

We have revised and simplified the sentence to clarify that this refers to the two studies discussed above.

Comment:

2nd page – “Patient and carers involvement design...” – this reads awkwardly and should be revised.

Response:

We have revised the sentence.

Comment:

Objective statement – suggest using understand versus evaluate (as this denotes a qualitative study).

Response:

We have revised objective to ‘understand’ accordingly.

Comment:

Suggest revising the last sentence of the Background e.g., clinical support to inform future clinical trial. Suggest “Staff reflections will contribute to the refinement of a model of environmental enrichment which will be evaluated in a future clinical trial” (if this is what you mean).

Response:

We have revised the last sentence to ‘Staff reflections will contribute to the refinement of an enrichment model for the acute stroke unit to inform future clinical trials.’

Comment:

Overview of design – suggest “how humans experience their world” rather than experienced.

Response:

We have deleted this text as we have revised our design paragraph and have used our original methodology wording ‘descriptive qualitative design’.

Comment:

Given that the authors begin the Results section with an overview of the participants, I suggest the sub-heading, "Overview of Themes" versus "Overview of Results".

Response:

We have changed the sub-heading to 'overview of themes' accordingly.