Author's response to reviews

Title: Teams and Quality of Care in Nursing Homes

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Author's response to reviews: see over
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We have rewritten the paper based on the comments from the reviewers. The introduction is completely rewritten, and we have changed the focus of the paper. We believe that the definition of teams is clearer and that the difference between real teams and dysfunctional teams is described in a more precise way. The method section is also changed according to the comments from the reviewers. The result section has had some minor changes. The discussion section and the conclusion section are rewritten.

We have given a detailed description of the changes below.

Sincerely,

Anders Kvale Havig
Thank you for your comments, which have improved the quality of the paper. My comments are in italic.

1. Is the question posed by the authors well defined?
   No, there is a hypothesis but the research question could be better defined (see also my comments below).

   We agree that the research question was not well defined. A better research question has been included.

2. Are the methods appropriate and well described?
   Yes, as far as I can oversee this. I am not a methodologist.

3. Are the data sound?
   Yes, idem.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes, accept for the fact that the I think that an article has either an introduction or a background.

   We have changed this. The background section is included in the introduction.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes, but I think that the focus from the beginning more should be on differentiating between real teams and quasi teams. I think that this is a new aspect. We already know that teams lead to better results in care.

   We agree that the difference between real teams and quasi teams is the most interesting aspect of this article. We have changed the title, the introduction and the discussion according to your suggestion, and the focus is now more on the difference between real teams and quasi or dysfunctional teams.
6. Are limitations of the work clearly stated? 

enough.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? 

More or less. I miss the work of Ed Wagner and his model on managing care and the importance of well functioning teams. And I miss in the discussion the importance of the team climate within teams on better performance.

We have read the article by Wagner, and added two references to it in the article. We have also read the article about team climate, which we found very interesting. Team climate is also included in the paper. Thank you for calling this article to our attention.

8. Do the title and abstract accurately convey what has been found? 

I think the title could better sound like: “Real teams and their effect on the quality of care in nursing homes” (DR)

We have changed the title according to your suggestion. We agree that it is better title.

9. Is the writing acceptable? Yes 

After the points I made below I wrote my rating: 

• Major Compulsory Revisions (=MaR) 
The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

• Minor Essential Revisions (=MeR) 
The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

• Discretionary Revisions(=DR) 
These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential

Introduction 

- Ed Wagner wrote a nice article on care teams and maybe it could be interesting to add some of his thoughts in your article. His definition on teams was: A patient care team is a group of diverse clinicians who communicate with each other regularly about the care of a defined group of patients and participate in that care. (The role of patient care teams in chronic disease management, Wagner, BMJ 2000; 320) (MeR)

Thank you for telling us about this article. We have referred to Wagner twice. While we like Wagner’s definition of teams, the definition by Guzzo et al. (1996) is widely used and is also based on the important work by Hackmann (1987). Consequently, we have chosen to use Guzzo’s definition in the article.

- Another aspect that deserves more attention is the difference between monoand multidisciplinary teams. My article on team climate in patient care teams

We have included a section about mono- and multidisciplinary teams in the introduction. Furthermore, we write about this in the method section and the discussion.

Background

- The background reports on the results of a literature review but I miss the search strategy and used terms (MeR)

Our research librarian helped us with the search. We searched in PubMed and Google Scholar. We used the following terms: nursing home, long-term care, skilled nursing, team, teamwork, work groups. We have included the search strategy in the paper.

- The background reads as a “results”-section

- I am not convinced of the fact that teams are the same as “staff-resident” assignment; maybe you can explain why you think this is the same. (MeR)

We have changed this and do not write much about consistent assignment in this version of the paper. Consistent assignment is now included in one paragraph only.

- I assume that your hypothesize (we can hypothesize that the use of teams – as operationalised in the present study – will be significantly related to higher levels of quality of care) is your research question? But this research is not new. We know that there is a positive relationship. Please explain. (MeR)

In hospitals, we agree, there are studies that support the use of teams. However, we do not fully agree that this has been supported in the study of teams in nursing homes. There are few studies of the effects of teams in nursing homes, the results are mixed (even if most of the studies support the use of teams) and there are methodological weaknesses with several of the studies. Furthermore, all the studies of the effects of teams in nursing homes are conducted in the US, where the framework conditions are different than those in Scandinavia and Northern Europe. Thus, we believe that it is important to get more knowledge about the relationship between teams and quality in nursing homes.

Although there are some similarities between hospitals and nursing homes, there are also considerable differences. For example, the length of stay for the residents/patients varies greatly across settings as do care plans. Thus, we should be careful with directly translating the results from hospital studies to the nursing home sector.

- In my opinion not only the presence of a team is important for higher levels of care but also the team climate within the team. Please give this some attention
We agree. We found your article about team climate very interesting, and we have included a few sentences about team climate in the discussion.

Methods

- Dependent variables:” Based on the regulation we developed four quality indicators: medical care, general care, social activities within the ward and social interactions between staff and residents”. I would not talk about quality indicators but areas or dimensions for quality of care. Each dimension is measured (or operationalized) by some questions. My question is of the authors performed a factor analysis to see if these questions load on the dimension? (MeR)

We agree, and have rephrased it. We no longer use the term indicator. We performed a factor analysis and the questions loaded on the dimensions.

- To me it is still not clear when a team is a real team and when a quasi team. This seems disputable to me. (MeR)

We have rewritten both the background and the method section and believe that this is clearer now. We agree that this could have been clearer in the original paper. We have also changed the word quasi teams with dysfunctional teams.

- Data analysis: you talk about three quality of care indices, but I suppose you mean the three sources for assessing the quality of care (relatives, staff and observation)? Please clarify. (MeR)

The indices are made by adding the five quality dimensions (four for field observations) and calculating the mean values. Thus, the first index is based on the five dimensions from relatives, the second index is based on the five dimensions from staff and the third index is based on the four dimensions from field observation.

Results

- Interesting point is the effort that is done to search for “real teams”. I agree that it if often the case that teams do not operate as real teams.

We think this is the most interesting part about the paper. Therefore, we have rewritten the whole paper and also changed the title.

- I think that the figures on the interaction effects are not necessary for the article. (DR)

We agree that it is not crucial, but we believe that it adds some clarity about how high levels of sick leave influences the effectiveness of teams.
Discussion

- Membership stability and primary tasks at the subunit level both have impact on team functioning and on being a real team. However, I miss in the discussion the impact of team climate on the functioning of teams. This can for example be measured with the Team Climate Inventory from Anderson and West (see for reference my own article on team climate mentioned above). (MeR).

_This is an interesting approach and we have included both the article from Anderson and West and your article. We believe that a real team is important in order to develop a good team climate and also vice versa._

- The part on limitations should not stand under “the Norwegian situation”. (MeR).

_We agree. A new section called “Limitations” is included in the paper._

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests
Reviewer's report
Title: Teams and Quality of Care in Nursing Homes
Version: 2 Date: 12 August 2013
Reviewer: Christa Hojlo
Reviewer's report:
Major compulsory revisions:
Review comments

Thank you for your comments, which have improved the quality of the paper. My comments are in italic.

1. The question, namely the definition of the term “team” starting with the title and abstract lacked clarity throughout the paper. To complicate it, there was discussion about “real teams” and “quasi teams”. There was also some reference to “interdisciplinary teams”.

2. The definition needs clearer discreet elements to be able to 1. Distinguish real teams from quasi teams and 2. To determine the composition of the “teams” that is being studied. There was reference to this, but it was not consistent.

1 & 2. The definition could have been clearer. We have edited both the abstract and introduction and method section. We believe that the definition is clearer now.

3. What does “team presence” mean versus team absence? This needs to be clarified. Is team absence different than “quasi teams”? Is team the way staff is assigned to work together to provide services to residents? The word “presence” throughout the document was confusing and needs clarification. All nursing home care requires a lot of staff for a variety of resident care and services. Is that not team presence? Again, need to be specific as to what “presence” means.

We understand that was confusing. We have rephrased the term “team presence” and it is no longer included in the paper.

4. There was confusion with the addition of the discussion about “consistent assignment”. This is a new and very specific approach to care delivery in nursing homes that is gaining support, but associating “team” in the context of this study with consistent assignment discussion is not clear. What does consistent assignment have to do with team? There may be a relationship, but it was not clear in the study description and the literature review. I could not tell if consistent assignment was an aspect of team.

We agree that this was confusing. The whole introduction has been rewritten, and the literature about consistent assignment is no longer in the same paragraphs as literature about teams. Instead, all the literature about consistent assignment is now included in one paragraph at the end of the literature review. We believe though that studies of staff-resident assignment are relevant for studies of teams. We agree that this topic belongs in a separate paragraph.
5. Finally regarding “team”, most nursing homes at least in the U.S. are required to have “interdisciplinary teams” for care assessment, care planning, and managing resident outcomes. These include social workers, recreation therapists, and others in addition to the direct care staff. So, in the review I was expecting more about interdisciplinary teams in that sense and lost what it was that the study was addressing. What I assumed was that “team” in this study meant a group of direct care providers (licensed nurses and unlicensed workers) consistently assigned to the same group of residents in nursing homes. Quasi teams appeared to be described in essence as dysfunctional teams. May need to make this a deliberate clarification. But you need to have strong definitions of what constitutes a good team versus a quasi team,

*We have included a paragraph about interdisciplinary and monodisciplinary teams in the Introduction. We have also written more about this in the method section, and also included it in the discussion. Furthermore, we believe that we now have a stronger definition of what constitutes a real team versus a dysfunctional team. This should be clearer now.*

6. Then, was the study about the impact of functional direct care staff organized as a team to deliver care to a group of residents and the impact of this approach on quality of care in nursing homes?

*Based on the comments from both of the reviewers, we have changed the title. The research question has also been changed.*

*We liked the word functional/dysfunctional teams, and have included this term in the paper. The term “real team” comes from the important work by Hackman (2002), and we still use this term in the paper.*

7. Consistent assignment on the other hand is a different construct, so there was no clarity about the connection between consistent assignment and “real teams”.

*We have changed this. Consistent assignment is now only included in one paragraph, and is not referred to in the same section as teams.*

8. All of this needs to be clarified and articulated so that there is no confusion about the construct being studied “teams”.

*We have rewritten the whole introduction. We believe that is less confusing now, and that team is more clearly defined.*

9. On page 12, there is discussion of various types of teams: work groups, empowered teams, self-managed teams or formal teams. These have different meanings within each group. Yet it is stated that these are labels for teams and the definition includes these labels. So, did the study definition of team include these as well? This needs to be included up front in the definition of teams with the caveat that each of these labels has specific meanings.
We have changed this and rewritten the introduction and method section. We have also written more about different teams in the introduction. Guzzo et al. 1996 include all the above mentioned teams in his definition of teams - as long as they meet the criteria in the definition.

10. The quality indicator variables. The term “Quality Indicators”, at least in the U.S. and I suspect in other countries as well, has specific designated meaning. For example, in the U.S. the Quality Indicators are a specific set of nationally vetted, studied, and accepted definitions and parameters. The use of the term ‘Quality Indicators’ (QI) in this study was confusing and needed more definition. The definitions as provided were too broad and not outcome oriented. For example, “medical care”. What did that mean? Were the QIs in this study QIs that are standard for the country’s nursing homes or were they designed for the study? This needs clarification. If designed for the study, on what basis were they selected? I would have liked to have seen QIs that were based in resident outcomes.

We agree that this might be confusing, and we have changed the word “indicator” with “dimensions” of quality. We have also tried to explain how we assessed quality of care better in the method section and included a paragraph about the medical dimensions under limitations. One challenge is that Norway do not have a set of national QIs. Consequently, researchers must collect quality data themselves.

The quality items/dimensions (each dimension consisted of several items) were designed for this study, but based on the National Regulation for Quality in Nursing Homes and Home Care and on two prior Norwegian studies of QoC in nursing homes. The indices are made by adding the five quality dimensions (four for field observations) and calculating the mean values. Thus, the first index is based on the five dimensions from relatives, the second index is based on the five dimensions from staff and the third index is based on the four dimensions from field observation. We have written more about this in the method section and tried to explain this more thoroughly. All the quality items are now included in the Appendix.

11. The study population: I was looking for resident participation in the study. So, the study really seemed to reflect staff and family participation. Perhaps the 900 hours of observation represented a proxy for resident response. However, the study would have been stronger if resident outcomes were represented in the QIs.

We agree that it would have been useful to include residents. However, due to strict privacy regulations in Norway, it is very complicated to obtain such data. Furthermore, there are high proportions of dementia in Norwegian nursing homes (in some of the wards included in the study over 80% of the residents had dementia). To compensate for lack of resident response, we included 3-4 days (20-25 hours) of field observations in each of the participating wards. We believe that the quality index that we got from the field observations is the best possible proxy for resident response. We have included a section about the lack resident response under limitations.

12. I was surprised by the lack of written informed consent to participate in the study. Although explained, it is still puzzling to me that this was not part of the
requirement for the study. Written consent represents part of the rigor of a study.

It was voluntary to participate in the study, and both staff, relatives and residents could refuse to participate. Consent procedures for this study were approved by staff and residents. Consent procedures included a description of the study, expectations of participation, procedures taken to ensure confidentiality, and the voluntary nature of the study. Nursing home staff were provided this information in written format prior to giving verbal consent, while family members were informed over the telephone prior to providing verbal consent.

Prior to the study, we contacted the Norwegian Directorate of Health, and they approved our methods. The study was also approved by the Norwegian Social Science Data Services (NSD). NSD is a national resource centre, which assists researchers with regard to data gathering, data analysis, and issues of methodology, privacy and research ethics. The main objective is to improve possibilities and working conditions for empirical research that is primarily dependent on the access to data.

We will further substantiate that no individual data about any staff, residents or relatives were collected and that all data were stripped of identifying information. Prior to the field observations, we made a declaration of nondisclosure of confidential information.

13. I also regret that some special care areas were omitted from the study since it would have added to the robustness of the study.

We could have included some special care units, but since they normally have considerably higher staffing levels than ordinary wards, we thought it best to exclude them from this sample. This is an area of interest for future research.

14. On page 9, although there is reference to staffing in the number of staff “per ward”, a more meaningful descriptor of staffing patterns would have been nursing hours per patient day especially since the wards ranged in size from 6-25. The numbers of staff then really do not give me a good picture of the staffing patterns.

We have included an overview over staffing levels in Table 2. The table shows the correlations between various factors, including staffing levels.

Due to the number of wards included in the study (N = 40), we had to limit the number of control variables. Therefore we included only the three factors that correlated strongest with the quality indices. These factors were ward size (number of residents per ward), days of sick leave and care level.


Thank you. We worked hard to achieve these rates.

16. On page 12, the study states, “The field observations……consisted of direct observations of the organizational structure and informal interactions with care workers”. Was there also observation of resident care and resident outcomes?
Yes, we also observed the quality level at the wards (p. 11 & 12), and one of the three quality indices are based on data gathered from the field observations.

17. Resident outcomes would have strengthened the study. Instead the observations were limited to “team” interactions only.

*We agree that resident outcomes would have strengthened the study, and we have included a discussion of this in the limitations section of the paper. We used field observation to assess quality of care (p. 10 and 11), and one of the three quality of care indices were based on field observations.*

18. I would have appreciated a better/stronger delineation of care levels. For example, residents who were total care and maybe bed bound; some idea of functional impairment level; something more about the intensity of staff interventions with residents that correlated with the way teams were organized to deliver services to residents.

*We agree that it would have strengthened the study if we had included better delineation of care levels. Unfortunately, there is no national data register of the residents’ health and function level that is easily accessible for researchers. Furthermore, due to strict privacy regulations in Norway, the collection of individual data about residents is highly complicated. We have included a section about this in the Limitation section of the paper.*

19. Given the above concerns, it was difficult to assess the relevance of the methodology to the findings.

*We hope the methodology is described more clearly now. We have rewritten both the background and the method section.*

20. The “results” in my estimation are not as meaningful as they could be given the above comments.

*We appreciate your comments and have edited the paper to improve clarity and enhance what we believe are the meaningful results of the paper.*

21. Conclusions. : I could not see, with the gaps in definitions and methodology, that the study conclusions were clear. The conclusion states that “presence of teams” is important for quality of care. That is a huge jump given that team was not well defined; that quality of care was not well defined and that the methodology could have been better aligned had the variables been clearer.

*With our extensive edits and the increased clarity of definitions and methodology, we feel that the revised conclusion is much stronger.*

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being
Published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests.