Author’s response to reviews

Title: Barriers and facilitators with medication use during the transition from hospital to home: a qualitative study among patients

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Version: 1 Date: 03 Mar 2019

Author’s response to reviews:

Editor Comments: I will like to thank the authors for submitting this important work to BMC Health Services Research. I have carefully considered the reviewers' comments which will help to improve your manuscript further. Please go through the reviewers' comments carefully and address them. I look forward to receiving your revised manuscript.

Authors: We would like to thank the editor and the reviewers for their careful and thorough reading of this manuscript and for the constructive suggestions. We respond on each comment and highlight which adjustments were made.

Kind regards, on behalf of all co-authors,

Sara Daliri
Reviewer Comments – Reviewer #1 (Yu Heng Kwan)

1) This is an interesting and important manuscript on medication management program. However, some issues are concerning:

Authors: No changes required. We thank the reviewer for the compliment and constructive suggestions. Please see our point-by-point response to the comments raised.

2) The concept of medication management is wide and broad, including adherence, pharmacist intervention etc. However, the topic guide only talk about barriers and facilitators on medication use with transition from hospital to home, and the suggested facilitators to that. I feel there need to be more explanation on why is this the focus in the intro. The jump was very quick from MRP to barriers and facilitators of medication use. I felt there need to be some address on medication adherence.

Authors: Changed. We restructured the introduction. We did not specifically focus on adherence, as we aimed to explore barriers and facilitators solely from the patient perspective (introduction, lines: 95-99).

“To design effective interventions to reduce MRPs in the transition from hospital to home, healthcare providers and organizations need to understand patients’ perspectives and respond more fully to their needs. This requires an understanding of barriers that patients experience that could result in MRPs but also of facilitators that could reduce MRPs.”

3) Furthermore, the setting of the study wasn't well clarified. I conducted some systematic reviews of medication adherence (https://www.ncbi.nlm.nih.gov/pubmed/28681249, https://www.ncbi.nlm.nih.gov/pubmed/26482548), although the reasons are largely the same but there are same reasons for difference. The topic guide and patient group need to be clear as it dictates how to ask the qns (in this case, disease and therapeutic factors are completely missing), thats why the ideas seems very limited. I listed 2 systematic reviews above - 1 rheumatology, 1 geriatrics to emphasis that it may be different at the details which is crucial to develop needed interventions for MRP as mentioned by the authors. Therefore, to improve, we need to define the population studied clearly and why this in this study. Different transition care patients profile will definitely result in different program needed. And from there, the topic guide need to be further improved based on that. These crucial issues are missing in this study

Authors: Changed. We agree that different transition care patients could need different programs based on the context of the study population. We clarified our patient selection (method, lines: 138-149):

This study focused on patients discharged from the departments of internal medicine, cardiology, pulmonology or neurology. Patients who received the intervention from the pharmacy-led transitional care multicenter study (n=197, see Table 1 for all inclusion and exclusion criteria) were eligible for participation in the focus groups. … The participants were all prone to post-discharge MRPs as they had to fulfill inclusion criteria which are associated with the occurrence of MRPs [2,3]. By selecting this high-risk population, we expect to gain more insight into barriers and facilitators, as patients are more likely to experience challenges during transitions of care and know better what is needed to overcome these problems…

4) I will like to ask if the study did achieve saturation to conclude the study in this way. I felt that to achieve saturation with 3 focus groups with such a broad topic is extremely amazing. I remembered doing a qualitative study myself and this is not very attainable. I felt at least 5-6 as per stated in the
literature with about 5-7 patients each are essential. These will result in about 30-50 patients. I understand that qualitative study the number is not an absolute one but to achieve saturation with 3 needs quite a bit of convincing myself. I feel more data is needed to clearly ensure that a robust sampling frame is achieved. As the sample and sampling method wasn't well defined, I cannot comment on the frame needed and this is crucial towards understanding the diversity of views for this study.

Authors: Changed. Recruitment to new groups continued until we had achieved thematic saturation as indicated by data redundancy i.e. when participants during the third focus group no longer raised new themes. According to literature, a sample size of two to three focus groups will likely capture at least 80% of themes on a topic—including those most broadly shared—in a study with a relatively homogeneous population using a semistructured guide [Guest et al. Sage journals (2016)], which was the case for our focus groups. Furthermore, two comparable qualitative research studies on this topic, interviewed 13-19 patients and reported considerable agreement between participants [Knight et al. Health Exp (2013), Mcmurray et al. Jour of Clin Nurs (2007)]. We have added these references to the discussion (discussion, lines: 483-487)

5) In view of the above major concerns and the fact that this is an important topic, I will encourage the authors to define a proper sampling frame, sampling method and review the topic guide and increase the focus group number to achieve a more robust qualitative study. If the authors wanted to do a qualitative study as part of a larger RCT, the title and objectives may need significant changes such as barriers to XX intervention and facilitators to make it more tune for the data presented.

Authors: Please see the answers of questions 2-4. We did not specifically aim to perform a qualitative study as part of a larger study. But we selected patients from this study as these were high risk patients who have comparisons with different procedures for transitional care or a lack thereof.

6) Thankful for the opportunity to review this interesting manuscript.

Authors: No changes required. We thank the reviewer for the compliment.

Reviewer #2 - (Afonso Miguel Cavaco, PhD)

1) I would like to thank the editor and the authors for the manuscript "Barriers and facilitators with medication use during the transition from hospital to home: a qualitative study among patients". General comments: This well written and well organised manuscript describes an important issue concerning the safe and effective medication use in transitional care, from hospital to home, according to the patients' perspective.

Authors: No changes required. We thank the reviewer for the compliment and constructive suggestions.

2) This matter has been addressed by health authorities around the world, from the broader WHO perspective (Transitions of Care: Technical Series on Safer Primary Care. Geneva: World Health Organization; 2016. Licence: CC BY-NC-SA 3.0 IGO) to medication-related publications (e.g. Transitional Care Medication Safety: Stakeholders' Perspectives. Content last reviewed August 2017. Agency for Healthcare Research and Quality, Rockville, MD). Transitions in care are closely linked with medication reconciliation, but here the authors were looking for patients' rather professionals'
perspectives. They refer in the Introduction scarce literature on the topic (line 99). This topic seems to me relevant enough to have more than 3 published papers. After a quick search, I’ve found other papers that could have been cited in the present manuscript. For instance, reference Kangovi S, Grande D, Meehan P et al. (2012) "Perceptions of readmitted patients on the transition from hospital to home", is one example that mentions medication issues after discharge (leading to rehospitalization), while Knight DA, Thompson D, Mathie E, & Dickinson A et al. (2013) "Seamless care? Just a list would have helped!" Older people and their carer’s experiences of support with medication on discharge home from hospital" is looking into the subject. Publications from the nursing area also have addressed this issue, i.e. McMurray A, Johnson P, Wallis M, et al. (2007) "General surgical patients' perspectives of the adequacy and appropriateness of discharge planning to facilitate health decision-making at home", or more recently Kollerup MG, Curtis T, Laursen BS (2018) "Visiting nurses' posthospital medication management in home health care: an ethnographic study". Thus, I’m not convinced on the paucity of research in this area to be the main or sole driving force for the present work. Knowing it is a qualitative piece of research, I would add in the Introduction the need to address the locally situated patients and providers, describing some characteristics of the healthcare system and medication provision after hospital discharge (e.g. formal or informal homecare support, role of the community-based professionals, etc.). Actually, this was addressed next as well as in Discussion and Study Limitations, but I would suggest being more explicit in the Introduction. In fact, the healthcare system organization emerged as a theme.

Authors: Changed. We acknowledge that themes, especially the barriers, are similar to what other studies have found [WHO. Transitions of Care (2016)] e.g. communication barriers, medication dispensing problems, which in our opinion indicates that these study results are not only relevant to locally situated patients or healthcare providers. Indeed, many studies have already been published on transitional care. However, the scope of this manuscript was to identify the barriers and facilitators specifically with medication use in the transition from hospital to home, throughout a patient’s perspective. The suggested literature, e.g. Kollerup et al identified problems with medication management only post-discharge throughout nurse observations. Kangovi et al used a survey with multiple choice answers, and therefore lack deeper exploration of the topic. Knight et al focused primarily on barriers and Corbett et al asked patients to reflect upon pre-defined barriers and therefore did not gain insight into problems participants experienced themselves. McMurray et al actually focussed on surgical recovery. Therefore, we do think that our study adds new knowledge to existing literature (e.g. personal medication counsellor).

We have added the suggested references to the introduction (introduction, lines 99-110):

Several studies have identified barriers and facilitators … but focused on the hospital discharge process in general rather than the transition from hospital to home[20, 21], or observed post-discharge problems throughout observations from healthcare providers [22].

3) In terms of methodological options and assuming little previous research on the topic, as mentioned by the authors, I would have run previously to the focus groups, individual exploratory interviews with patients, as a way to establish a more robust focus group interview guide.

Authors: Changed. We have conducted previous research where we interviewed patients individually and used surveys to assess DRPs in the transition form hospital to home. We have added the following (method, lines: 168-172):

The interview guide was based on previous research of researchers who have over 10 years’ experience with transitional care and medication-related problems due to transitions in care. This included interviews with patients on their informational needs before and after discharge and surveys to assess MRPs [10, 26].
4) Also, in Methods, authors mentioned in Table 1 the inclusion/exclusion criteria, reaching 197 participants. Authors have excluded those patients in the 1st phase of the intervention (50) due to possible memory/recall bias. This reason is, in my opinion, an exclusion criterion too.

Authors: Changed. We have adopted this suggestion (methods, table 1 & line 141): Patients included in the first phase of the intervention (n=50) were excluded to limit recall-bias.

5) From the 125 contacted patients, 37 were interested in participating and 24 were randomly invited. Besides possible self-selection bias of the 37 patients, it worries me the lack of homogeneity/heterogeneity sample intentionality. How were authors able to control for information-rich participants, thus contributing to a comprehensive data saturation?

Authors: Not changed. As for most qualitative studies preventing self-selection bias entirely is impossible, and we have mentioned selection-bias as a limitation of this study (discussion, line: 479). To reduce some of the self-selection we have invited the final participants (n=24) randomly.

6) In Results, the themes and their subthemes seemed to me possible to be valued i.e. to present a negative or neutral sign, concerning a general attitude or emotions from patients when dealing with medication, e.g. disappointment, unsureness, fear. Were no positive feelings?

Authors: Changed. In general, participants were happy with the care they received from their healthcare providers both during hospitalization and the post-discharge period. However, the purpose of this study was to ask patients (first) about barriers with medication use, which are usually ‘negative’ experiences. Whereas, when patients were asked about facilitators, some shared experiences which they were very happy about.

For example, a patient who talked about the home-visit post-discharge (results, lines: 388-390): “It is quite a reassurance that this is done; it means the continuation of hospital care at home is well-organized… it is given attention, which is really great.”

7) Additionally, I would see beneficial to the reader the highlight of facilitators that were not only the direct reversion of the barriers described before. This can be seen as those facilitators standing out when the two fishbones graphs are "overlying".

Authors: Changed. We have added the following sentence to the results section (lines: 320-325):

Some facilitators were mentioned that were not directed at a specific barrier but were generally perceived as helpful, including the improvement of pharmacy logistics. For instance, by introducing a locker service with 24/7 accessibility, which allows patients to collect their medication anytime of the day and skip queues, or to assign one dedicated pharmacy assistant in the pharmacy who is responsible for preparing all the discharge prescriptions.

8) The interview guide was developed with the participation of several experts, including patients' proxies. Again, I would see individual interviews with expert patients more useful, especially knowing that at the end only two questions entered the interview guide. Actually, I have doubts about the semi-structured guide/questions: as they are presented, (1) and (2) look to me as very open questions (personal experiences and/or relative or friends accounts), more useful for in-depth individual interviews than to stimulated group dynamics, e.g. generating opposite ideas, as expected from a focus group interview.
Authors: Changed. Please also see question 3. We agree with the reviewer that the concept of medication use is broad and complex. However, we did not want to steer the conversations in a particular direction and lose relevant information. Therefore, we deliberately chose to convene the focus groups around this broad topic with these open questions to identify any barrier and facilitator with medication use during transitions from hospital to home. We developed a list with examples of barriers and facilitators which the moderator could use in case participants needed help. We have described this in the method section (methods, lines: 177-179) and added the list to our manuscript (Additional file 1). This list, however, was not used by the moderator because there was a lot of discussion among participants, as they reacted on each others experiences, especially when they had to think of facilitators (results, lines: 206-208).

9) (A) It would be interesting to have a reason to stop at the 19th participant (data redundancy?), (B) but more importantly to know who actually was in each group. (C) Authors were also keen to show the figures of the whole population (Table 2). If this was to be sure of numerical similarity (or any kind of representativeness), it would require statistical testing, which is also unusual in a qualitative paper.

Authors: Changed. (A) Recruitment to new groups continued until we achieved thematic saturation as indicated by data redundancy i.e. when participants during the third focus group no longer raised themes not already elicited. Also, according to literature, a sample size of two to three focus groups will likely capture at least 80% of themes on a topic [Guest et al. How Many Focus Groups Are Enough? 2017. Sage journals]. (B) We have added a table to our manuscript (Additional file 2: Table 3) to show the demographic characteristics of all the group members in each focus group. (C) With this table (table 2) we did not want to proof numerical similarity between the groups but to simply show that for these demographic characteristics the study population was mostly comparable to the whole study population group, indicating there was no selection bias.

10) Knowing the use of a semi-structured guide, it would have been interesting to know who the patients see as the best professional, including cost-effectiveness.

Authors: Changed. In the facilitators section of the results patients said the following about professionals (results, line: 369): Some believed that general practitioners, nurses or pharmacists were the best professionals to fulfil this role, because they are more closely related to the patient compared to others. For clarification we have added the following sentence to the discussion (discussion, lines: 424-427):

It does not matter to patients which professional fulfils this role, as long as this person is closely related to the patient and could act as a point of contact between the patient and his or her involved healthcare providers in the care continuum.

11) I would expect an advanced discussion on the personal medication-counsellor i.e. what would be required as further qualification to address the demands of a specialised home visit, beyond a research project on pharmacy-led transitional care.

Authors: Changed. Please see question 10.

12) Line 448. I have some trouble with the word "representativeness" in qualitative studies. I would prefer other formulations, such as qualitative clarity, rather than sample power related-ones (cf. Luborsky MR, Rubinstein RL. (1995) Sampling in qualitative research: Rationale, issues, and methods). Clarity here comprise at least one theoretical grounding and the demonstration of sensitivity to context.
Authors: Changed. Thank you for the suggestion. We have changed this word into qualitative clarity (discussion, line: 481).

13) Table 1 is embedded in the text, Table 2 isn't.

Authors: Not changed. The BMC Health Services Research author guidelines request the following concerning tables: "Tables larger than one A4 or Letter page in length can be placed at the end of the document text file. Please cite and indicate where the table should appear at the relevant location in the text file so that the table can be added in the correct place during production."
We have cited in the manuscript where the table should be placed (results, line: 211).

14) Thank you.

Authors: Thank you.