PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	How far are we from a medication use process aiming at well-informed adherent patients with long-term medications in Finland? A qualitative study
AUTHORS	Mononen, Niina; Pohjanoksa-Mäntylä, Marika; Airaksinen, Marja; Hämeen-Anttila, Katri

VERSION 1 – REVIEW

REVIEWER	Elizabeth Manias Deakin University Australia
REVIEW RETURNED	25-Jan-2020

GENERAL COMMENTS	General This is an interesting study examining stakeholders' views on developing a well-coordinated medication use process by integrating appropriate medicines information. There are a number of aspects that need to be addressed to improve the paper. Abstract The aim is very complex in the abstract, and is difficult to follow without reading through the key elements of the method. I suggest providing a more simple aim. No definition was provided of the National Medicines Information Network. Readers outside of Finland may not know this network or understand its intent. Information is needed about how data analysis was undertaken. It is not clear how decisions were made about the ways in which the authors decided actions within the medication use process were well-implemented, and in which actions needed development. Introduction There should be details provided about past research conducted in other countries about stakeholders' perceptions and experiences of national medicines strategies. Information is needed about the gaps of past work, and the important contextual and methodological contribution of the current work. Methods The authors explained the context of the study very well, by referring to the purpose, the structure and the content of the national medicines policy, the National Medicines Information Network, and the National Medicines Information Strategy.

	While ethics approval was waived for the study, there needs to be details about how ethical principles were addressed in the study. These ethical principles include privacy and confidentiality of individuals participating in the study, and the process of consent that was followed. Additional information is needed about the data collection procedure followed for the conduct of interviews. The process of rigor for the research process needs to be detailed. Results Aside from the discipline groups and the types of affiliation of stakeholders, information is also needed about their gender, ages and years of experience in the stakeholder organisation of the Network. It is a concern that there were no patient representatives as stakeholders within the study. The stakeholders present referred to issues affecting patients, and it would have been useful and valuable to obtain the views of patients themselves. I recognise that the authors have addressed this issue as a limitation of the study. There are no demonstrative quotes at all representing the identified categories and sub-categories. Similarly, no quotes were provided as evidence to support the new conceptual framework developed for the medication use process. I understand that there are illustrative example quotes in the Appendix. However, it would be useful to provide some quotes in the main text. The quotes provide the rich detail of the complexities affecting the National Medicines Information Strategy, and these quotes should not be isolated in the appendix, where they may not be readily seen. The four figures are very informative, and provide very useful clarifying details of the complexity underlying the results. Discussion The second and third paragraphs of the discussion provide background information about the National Medicines Information Strategy and should be either incorporated into the context section of the paper, or removed altogether. I would like to know more about the challenges affecting home care and social care units. Further explanations should be provided about the training needs of care personnel in geriatric facilities and the responsibilities of practical nurses in geriatric care units. Similarly, only sparse explanation was provided on patient involvement in the medication use process and the issues affecting the motivation for self-management and empowerment with medication use, especially for those with long-term medications. This complex issue needs much more comprehensive interpretation. The authors brought up issues of trustworthiness, credibility, comprehensivity, conformability, objectivity and transferability. These are issue of rigor and therefore belong in the rigor section of the methods, and not in the strengths and limitations section.

	Typographical and grammatical issues 'Carrying out long-term medication…' seems to be an incomplete phrase (p. 4, line 6). '…to ensure conduct of medication' seems to be an incomplete phrase (p. 4, line 12). The sentence beginning with 'The National Medicines Information Network established…' is difficult to understand (p. 5, lines 48-49). It is a long sentence with no punctuation marks. Change to 'patients' management' on p. 10, line 36.

REVIEWER	Syed Tabish R. Zaidi School of Healthcare, University of Leeds, United Kingdom
REVIEW RETURNED	27-Jan-2020

GENERAL COMMENTS	The paper describes the findings from a large interview study that may have been conducted as a part of the implementation/evaluation of a National program. I believe that the findings are highly relevant to Finland though I am struggling to see how the paper, in its current form, is of any value to those who are reading it to see what lessons can be learned from the Finish experience. The study is also reasonably outdated i.e. conducted in 2015 and is only focusing on one aspect of the overall program. The paper is difficult to read for those who are outside the system. Following are my thoughts about how the paper can be revised to make a meaningful contribution to the literature: 1. Introduction: Please limit the general introduction to a paragraph and two and focus on the background and contextual situation earlier. Please consider giving a figure/appendix to better describe the medicines information initiatives of your country so readers are better informed of the context. 2. Aims: Please provide clear aims of the study. Is it 'gauging' the progress made against the outcome measures from the National initiative or is it exploring opportunities for future progress? You are trying to summarise massive data from several interviews in a paper and it is okay as far as you maintain a focus and be specific about the rationale for it. 3. Methods: Well described so no suggestions for changes but I have a validity concern. You are using a deductive approach from the National medicine initiative and this needs to be well justified. If you would like to retain this aspect of the paper then you will need a much clearer description for its rationale. 4. Results: Findings are presented in a much more complex manner. I am neutral as to whether you retain the figures and appendix or bring a tabular representation with more description but at the moment, Fig 3 and 4 are way busy and are not contributing enough to enhance the reader's understanding of your findings. You are presenting 7+3 themes together with a count of specific findings from interviews. This is making it very difficult to follow what you are trying to communicate. It may be worth presenting one figure with colour coding of the themes alone from 'implemented' and 'needed to be implemented' themes. Lack of patient participants is making the findings of patients' concerns questionable. This is the reason why you are stating that the majority of patients with chronic illness have a good understanding of their medicines, when in fact, there is more than

	enough evidence that patients' often have limited understanding of their disease and medicines. 5. Discussion: This is where the whole study is falling apart. While we appreciate the enormous work that is being conducted in Finland and there may be good lessons for the rest of the world from it though it is not evident from your paper. You need to present the findings in context of how the rest of the world can learn from it. What are the concepts of pharmaceutical care from the US or Medicines Optimisation from the UK, for example, have in common or different to your conceptual model. This is where your study will become relevant to the rest of us. In conclusion, I understand that writing this paper may not be a planned study rather a pragmatic evaluation of a National Program that can be written as a paper. However, the way it is written, it is merely describing a component of your overall evaluation with little attempt to relate it to the broader medicines use practices prevalent in the world.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

General

This is an interesting study examining stakeholders' views on developing a well-coordinated medication use process by integrating appropriate medicines information. There are a number of aspects that need to be addressed to improve the paper.

Abstract

The aim is very complex in the abstract, and is difficult to follow without reading through the key elements of the method. I suggest providing a more simple aim.

Authors' response: Thank you for this important comment concerning the study aim. As suggested, we have simplified and clarified the aim as follows:

ABSTRACT/Objective (page 2, lines 9-13):
"Finland is one of the few countries that has established a national medicines information (MI) strategy. The ultimate goal of the Strategy is a well-implemented medication use process resulting in wellinformed adherent patients. This study aimed at evaluating the implementation of the Strategy three years after its launch."

No definition was provided of the National Medicines Information Network. Readers outside of Finland may not know this network or understand its intent.

Authors' response: Thank you for this comment. We have added the following definition of The National Medicines Information Network to the abstract:

ABTRACT/Design (page 2, line 19):
"The Network comprises national key stakeholders producing and using MI."

Information is needed about how data analysis was undertaken. It is not clear how decisions were made about the ways in which the authors decided actions within the medication use process were well-implemented, and in which actions needed development.

Authors' response: Thank you for this important note. More details about the data analysis, especially about how the authors decided whether actions within the medication use process were wellimplemented, and which actions needed development, were added into the abstract as follows:

ABSTRACT/Design (page 2, line 19):
"Data were deductively and inductively content analysed by applying the Framework Method."

ABSTRACT/Outcome measures (page 2, lines 34-37):
"A new conceptual framework was developed based on stakeholders' views on well-implemented actions and actions needing development in the medication use process at: 1) infrastructure (macro), 2) healthcare professionals (meso), and 3) patient (micro) level."

Introduction

There should be details provided about past research conducted in other countries about stakeholders' perceptions and experiences of national medicines strategies. Information is needed about the gaps of past work, and the important contextual and methodological contribution of the current work.

Authors' response: Thank you for this comment concerning previous research in the field. To our knowledge, very few countries in Europe and in the entire world have established national medicines information strategies. According to the recent report by the International Pharmaceutical Federation FIP, the UK and Finland were the only countries in the European Union (EU) that had launched a national medicines information strategy by 2017 (FIP 2017). Outside EU, USA has been a pioneering country and showing the way in this respect. Thus, Finland provides a unique opportunity to share experiences of implementing a national medicines information strategy outside countries with long history of clinical pharmacy and pharmaceutical care. We have added this notion to the Introduction as follows:

INTRODUCTION (page 4, line 39):
"Finland is one of the few countries that have actually established a long-term strategic development plan for enhancing coordination between national key stakeholders involved in producing and using medicines information.(International Pharmaceutical Federations 2017, Ministry of Social Affairs and Health 2011, Finnish Medicines Agency Fimea 2012, Hämeen-Anttila et al. 2013)"

Methods

The authors explained the context of the study very well, by referring to the purpose, the structure and the content of the national medicines policy, the National Medicines Information Network, and the National Medicines Information Strategy.

While ethics approval was waived for the study, there needs to be details about how ethical principles were addressed in the study. These ethical principles include privacy and

confidentiality of individuals participating in the study, and the process of consent that was followed.

Authors' response: Thank you for pointing out ethical issues of the study. As suggested, we have added more details about aadressing ethical pronciples in the study, particularly concerning privacy and confidentiality of individuals participating in the study, and the process of consent that was followed. Principles of research ethics followed in the study are now described in the manuscript as follows:

METHODS/Research ethics (page 8, lines 15-26):
"The study was conducted according to good scientific practice, following the guidelines of the Finnish Advisory Board on Research Integrity.(Finnish National Board on Research Integrity 2019) According to the guidelines, the study was deemed to be exempt from requiring approval from the research ethics committee. The research plan was approved by The National Medicines Information Network before starting the data collection. Prior to the interviews, participants were informed in writing about the study and that the interviews will be tape-recorded. At the beginning of each interview they were asked to give informed consent. Participation was voluntary with the opportunity to withdraw from the study at any time. The recordings and interview notes were digitally stored behind a password. All data were anonymised and were accessible only to the authors. Privacy and confidentiality of the individuals participating in the study were ensured throughout the entire research project."

Additional information is needed about the data collection procedure followed for the conduct of interviews. The process of rigor for the research process needs to be detailed.

Authors' response: Thank you for this important comment. Rigor of the research and data analysis process was described in the Discussion section (see page 14, lines 8-28). This paragraph has been moved to the Methods section, under the new title "Ensuring rigor of the analysis".

Results

Aside from the discipline groups and the types of affiliation of stakeholders, information is also needed about their gender, ages and years of experience in the stakeholder organisation of the Network.

Authors' response: Thank you for this suggestion. As the interviewees performed as informants on behalf of their stakeholder organisations, background information other that gender was not documented during the interviews. The gender distribution has been added to the Results section, and the lack of other background information has been discussed in the Discussion section. A majority of the informants were healthcare professionals, half of them being pharmacists, which may have skewed the results. This aspect has been considered in the limitatiatons of the study in the Discussion section as follows:
RESULTS (page 8, lines 47-48):
"Females represented 77% (n=61) of participants."

DISCUSSION/Strengths and limitations of the study (page 13, line 59):
"Moreover, participants' demographics, except gender, were not documented."

It is a concern that there were no patient representatives as stakeholders within the study. The stakeholders present referred to issues affecting patients, and it would have been useful and valuable to obtain the views of patients themselves. I recognise that the authors have addressed this issue as a limitation of the study.

Authors' response: We agree that it is unfortunate that there were no "real patient" involved in patient representatives. However, "patients' voice" was received via patient organisation representatives as

described in the manuscript. Of the stakeholder organisations, 8/42 were patient organisations. As the Reviewer recognised, this limitation has been addressed in the limitations of the study (see page 13, lines 46-48). Furthermore, we have added the following sentence emphasising that patients' views should be explored in the future:

DISCUSSION (page 13, lines 17-18):
"Future studies should focus on real patients to explore their perceptions and experiences."

There are no demonstrative quotes at all representing the identified categories and subcategories. Similarly, no quotes were provided as evidence to support the new conceptual framework developed for the medication use process. I understand that there are illustrative example quotes in the Appendix. However, it would be useful to provide some quotes in the main text. The quotes provide the rich detail of the complexities affecting the National Medicines Information Strategy, and these quotes should not be isolated in the appendix, where they may not be readily seen.

Authors' response: Thank you for your suggestion of adding demonstrative quotes to the main text to support the new conceptual framework developed. After careful consideration, we suggest that the quotes will be presented in a separate table as they used to be (Appendix C). We tried to place direct quotes in the text, but they "faded" there. Thus, quotes may have more "power" when gathered in a table. The table gives a complete view of the quotes and the message they contain to generate results. The principles of providing quotes as evidence to ensure the reliability of the results have been added to the Methods section, placed under the new subheading "Ensuring rigor of the analysis" as follows:

METHODS/Ensuring rigor of the analysis (page 8):
"Quotations have been selected to represent the indentified main and sub-categories to support the new conceptual framework developed for the medication use process."

The four figures are very informative, and provide very useful clarifying details of the complexity underlying the results.

Authors' response: Thank you for your kind feedback.

Discussion

The second and third paragraphs of the discussion provide background information about the National Medicines Information Strategy and should be either incorporated into the context section of the paper, or removed altogether.

Authors' response: Thank you for this suggestion. We have removed background information about the Strategy from the Discussion section (second and third paragraph) and incorporated it partly to the Context section as suggested.

I would like to know more about the challenges affecting home care and social care units. Further explanations should be provided about the training needs of care personnel in geriatric facilities and the responsibilities of practical nurses in geriatric care units.

Authors' response: We have described in greater detail the challenges, such as training needs, faced by care personnel in homecare and social care units.

Similarly, only sparse explanation was provided on patient involvement in the medication use process and the issues affecting the motivation for self-management and empowerment with

medication use, especially for those with long-term medications. This complex issue needs much more comprehensive interpretation.

Authors' response: Thank you for these suggestions to complement our reasonings regarding patient involvement in the medication use process. We have added more comprehensive interpretation of these issues into the Discussion section.

The authors brought up issues of trustworthiness, credibility, comprehensivity, conformability, objectivity and transferability. These are issue of rigor and therefore belong in the rigor section of the methods, and not in the strengths and limitations section.

Authors' response: Thank you for this suggestion. The paragraph in the Discussion (see page 14, lines 8-28) has been moved to the Methods section, and placed under the new subtitle "Ensuring rigor of the analysis".

Typographical and grammatical issues

Authors' response: Thank you for pointing out grammatical errors and other unclear sentences. We have corrected them as follows:

'Carrying out long-term medication…' seems to be an incomplete phrase (p. 4, line 6).

"Carrying out long-term medication is a collaborative process whereby the ultimate goal is well-informed patients who have capability and motivation to self-manage their medications."

'…to ensure conduct of medication' seems to be an incomplete phrase (p. 4, line 12).

"Team-based and patient-centered care emphasises the roles and tasks of each healthcare provider involved in the care process to ensure medication use in a high-quality, safe, effective, economical and rational manner.(World Health Organization 2002)"
The sentence beginning with 'The National Medicines Information Network established…' is difficult to understand (p. 5, lines 48-49). It is a long sentence with no punctuation marks.

"The National Medicines Information Network was established to promote the implementation of the National Medicines Information Strategy. The Network consists of four working groups and a coordination group involving a wide range of stakeholders representing medicines information providers and users (see Table 1)."

Change to 'patients' management' on p. 10, line 36.

Authors' response: Thank for this note, "patient´s management" has been changed to "patients' management".

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Reviewer: 2

The paper describes the findings from a large interview study that may have been conducted as a part of the implementation/evaluation of a National program.

Authors' response: Thank you for this comment. Indeed, this study was conducted as a part of the early-phase evaluation of the National program.

I believe that the findings are highly relevant to Finland though I am struggling to see how the paper, in its current form, is of any value to those who are reading it to see what lessons can be learned from the Finish experience.

Authors' response: Thank you for this important comment concerning the approach of the manuscript being too "Finnish-centric". We have taken this advice into consideration throughout the manuscript while revising it.

The study is also reasonably outdated i.e. conducted in 2015 and is only focusing on one aspect of the overall program. The paper is difficult to read for those who are outside the system. Following are my thoughts about how the paper can be revised to make a meaningful contribution to the literature:

Authors' response: Thank you for this comment. We have quite substantially rewritten the manuscript to make it more readable, understandable and useful for the readers outside the system. Even though the stakeholder interviews were carried out in 2015, we have tried to make it visible how the MI Strategy and related research have been influencing current medicines policies, particularly the Rational Pharmacotherapy Action Plan established in 2018 that has priority in partnerships with medicine users. We have also made it more visible in the text that the MI Strategy in Finland is one of the few MI Strategies in the world (in addition to those in the UK and USA). Thus, it provides quite a unique case study that can encourage other countries to systematically focus on MI practices.

1. Introduction

Please limit the general introduction to a paragraph and two and focus on the background and contextual situation earlier. Please consider giving a figure/appendix to better describe the medicines information initiatives of your country so readers are better informed of the context.

Authors' response: Thank you for these comments. We have rewritten the Introduction as suggested and added a figure of evolution of medicines information to patients in Finland since the 1960s (see Appendix A).

2. Aims

Please provide clear aims of the study. Is it 'gauging' the progress made against the outcome measures from the National initiative or is it exploring opportunities for future progress? You are trying to summarise massive data from several interviews in a paper and it is okay as far as you maintain a focus and be specific about the rationale for it.

Authors' response: Thank you for this important comment. Our research was merely a pragmatic evaluation seeking opportunities for future progress in the early stages of the Strategy's implementation. We have clarified the aim of the study in the Introduction section as follows:

INTRODUCTION (page 5, lines 3-7):

"The aim of this study was to evaluate the implementation of the Strategy after the first three-year operational period (2012-2014) in 2015."

3. Methods

Well described so no suggestions for changes but I have a validity concern. You are using a deductive approach from the National medicine initiative and this needs to be well justified. If you would like to retain this aspect of the paper then you will need a much clearer description for its rationale.

Authors' response: We utilised both deductive and inductive approaches in building the conceptual model of medication use process. The model was based on the same medication use process used as a basis in our National Medicines Information Strategy (see figure 1). Therefore, this model was used to support interviews to gain insight into well-implemented actions and actiond needing development in the medication use process. In addition, the model served as a framework in the analysis of interview data (deductive approach). The developed model was supplemented with new main and subcategories derived from the interviews (inductve approach). However, both main and sub-themes relating to our key results, well-implemented actions and actions needing development were inductively derived from the data. We have added refinements to the Discussion section of using the figure of medication use process and how it may affect the study results as follows:

DISCUSSION/Strengths and limitations of this study (page 14, line 5):

"Furthermore, the figure was also utilised as a framework in the deductive analysis which was supplemented with inductive analysis of the interview data. Thus, the figure was the basis for conducting the study and it has a strong influence on the study findings."

4. Results

Findings are presented in a much more complex manner. I am neutral as to whether you retain the figures and appendix or bring a tabular representation with more description but at the moment, Fig 3 and 4 are way busy and are not contributing enough to enhance the reader's understanding of your findings. You are presenting 7+3 themes together with a count of specific findings from interviews. This is making it very difficult to follow what you are trying to communicate. It may be worth presenting one figure with colour coding of the themes alone from 'implemented' and 'needed to be implemented' themes.

Authors' response: Thank you for the comment. Our qualitative data is extensive and the Figures 3 and 4 contain a lot of information derived from the stakeholders' interviews. Our goal was to summarise stakeholders' perspectives as concice as possible. We agree with Reviewer 1 that our figures are informative, and they provide useful clarifying details of the complexity underlying the results. Therefore, we have not made any changes to the Figures 3 and 4. Instead, we added a new figure with colour coding of the themes as suggested. Please, see the new Figure 2.

Lack of patient participants is making the findings of patients' concerns questionable. This is the reason why you are stating that the majority of patients with chronic illness have a good understanding of their medicines, when in fact, there is more than enough evidence that patients' often have limited understanding of their disease and medicines.

Authors' response: We agree that the lack of patient participants is a limitation in our study. See our previous comment concerning this issue. We have also discussed this limitation in Discussion section of the manuscript.

5. Discussion

This is where the whole study is falling apart. While we appreciate the enormous work that is being conducted in Finland and there may be good lessons for the rest of the world from it though it is not evident from your paper. You need to present the findings in context of how the rest of the world can learn from it. What are the concepts of pharmaceutical care from the US or Medicines Optimisation from the UK, for example, have in common or different to your conceptual model. This is where your study will become relevant to the rest of us.

Authors' response: We have rewritten and reorganised the Discussion section to reflect the Reviewer's comments. If needed, we are ready to elaborate the discussion concerning our conceptual model compared to the landmark concepts of pharmaceutical care or medicines optimisation.

In conclusion,

I understand that writing this paper may not be a planned study rather a pragmatic evaluation of a National Program that can be written as a paper. However, the way it is written, it is merely describing a component of your overall evaluation with little attempt to relate it to the broader medicines use practices prevalent in the world.

Authors' response: Thank you for your considerations. We agree that this type of pragmatic evaluation of the national program is rather complex. We believe that using such a pragmatic approach, we could understand the impact of interactions, nonlinear relationships and multi-level influences on the medicines use practices.(Chen 2016) A pragmatic evaluation has been critised that the approach is fragmented, lacking a developed philosophy, and there is limited practical prescriptions on how to deal with complex and challenging interventions.(Crane et al. 2019, Datta et al. 2013) Therefore, there is a demand for this type of pragmatic evaluation that can serve as an example for the future evaluation of the national programs. Similar national long-term programs related to the strategic development of medicines information have been rare in other countries. Other examples can be found from the UK and the US.(International Pharmaceutical Federation FIP 2017) We hope that other countries could learn from our case and be encouraged to establish and evaluate their own national programs.

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VERSION 2 – REVIEW

REVIEWER	Elizabeth Manias Deakin University, Australia
REVIEW RETURNED	21-Mar-2020

GENERAL COMMENTS	General Overall, the authors have addressed the majority of my concerns raised in my initial review. There are still some areas where the paper requires careful editing for grammar and sentence construction. For example, there are misplaced apostrophes and missing articles of nouns within the abstract. Abstract The Framework method is an inductive approach to data analysis – please clarify that the data were analysed deductively according to the medication use process of the National Medicines Information Strategy. There needs to be some information about the implications for practice as a result of the research. Introduction I mentioned in my previous review that the introduction should contain details about past research conducted in other countries about stakeholders' perceptions and experiences of national medicines strategies. The authors indicated that the UK and the USA have undertaken work in this area. It would be useful to have some explanation about the research undertaken in these two countries, and of how that work informs the current research. Methods The authors addressed my concerns in relation to the methods. Results The authors addressed my concerns in relation to the results.

	Discussion Implications of the study are relatively brief, especially given the complexity and comprehensive nature of the work undertaken. More specific information is required about how the results inform practice and policy. Similarly, areas for future research are non-specific.

VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

General

Overall, the authors have addressed the majority of my concerns raised in my initial review.

Authors' response: Thank you for your valuable comments that remarkably improved our manuscript and thank you for reviewing the manuscript again in its revised format. We have taken all your recommendations into consideration in this current version.

There are still some areas where the paper requires careful editing for grammar and sentence construction. For example, there are misplaced apostrophes and missing articles of nouns within the abstract.

Authors' response: Thank you for this important notion that the manuscript requires careful editing for grammar and sentence construction. The current version has been proofread by a native professional to polish the language.

Abstract

The Framework method is an inductive approach to data analysis – please clarify that the data were analysed deductively according to the medication use process of the National Medicines Information Strategy.

Authors' response: Thank you for this comment. We have added the suggested clarification to the Abstract as follows:

ABSTRACT/Design (page 2, line 19):
"Data were deductively analysed according to the medication use process of the MI Strategy using the Framework Method, complemented with inductively derived categories."

There needs to be some information about the implications for practice as a result of the research.

Authors' response: We have rewritten the conclusion to add more information about the implications for practice as a result of the research as suggested. Please, see the revised text below:

ABSTRACT/Conclusion (page 2, lines 53-56):

"Major challenges found in this evaluation are considered in the ongoing Rational Pharmacotherapy Action Plan 2018–2022 by the Ministry of Social Affairs and Health."

Introduction

I mentioned in my previous review that the introduction should contain details about past research conducted in other countries about stakeholders' perceptions and experiences of national medicines strategies. The authors indicated that the UK and the USA have undertaken work in this area. It would be useful to have some explanation about the research undertaken in these two countries, and of how that work informs the current research.

Authors' response: Thank you for this important comment. We have added more details about past research conducted in other countries about stakeholders' perceptions and experiences of national medicines information strategies. Please, see the added text below:

INTRODUCTION (page 5, line 5):
"Although stakeholders play a key role in the implementation of MI strategies, the implementation has not previously been evaluated from their perspective.(International Pharmaceutical Federation 2017) The aim of this study was to evaluate the implementation of the MI Strategy in Finland from the stakeholders' perspective."

Methods

The authors addressed my concerns in relation to the methods.

Authors' response: Thank you.

Results

The authors addressed my concerns in relation to the results.

Authors' response: Thank you.

Discussion

Implications of the study are relatively brief, especially given the complexity and comprehensive nature of the work undertaken. More specific information is required about how the results inform practice and policy. Similarly, areas for future research are non-specific.

Authors' response: Thank you for these recommendations to add more specific information about how the results inform practice and policy. We have described more in detail implications for practice and policy as follows:

DISCUSSION/ Implications and future research (page 14):
"The key shortcomings highlighted by the stakeholders have formed the core of the Rational Pharmacotherapy Action Plan 2018–2022.(Hämeen-Anttila et al. 2018) Actions are underway to improve the coordination and management of medication use process, e.g., by launching a reconciled medication list, and to increase patient engagement and partnership in their care. The Action Plan was

based on the Government Program 2015–2019, still being supported by the current Program as part of the ongoing social and health services reform. (Finnish Government 2019a,b; Prime Minister's Office 2015) Thus, it has a strong mandate to change the medication use process. Such long-term strategies as Partnership in Medicine Taking in the UK provide good practices to be benchmarked. (Marinker et al. 1997) The Chronic Care Model is still a valid theoretical framework for getting the patient at the centre.(Wagner et al. 1998, 2001)"

Areas for future research have been discussed in various paragraphs in the Discussion section. We have picked those sentences and presented them below:

"Patients on long-term medications need to be better involved in implementing their treatment by improving empowerment and partnership, and by finding new ways to support self-management and treatment commitment."

"Further research should focus on geriatric care units in primary and social care to better understand the systems-based root causes and contributing factors of actual and potential risks in the current medication use processes."

"To be successful, research and actions should focus on patient approach in the implementation of longterm medications. Only the patients themselves can describe the issues that matter to them affecting their motivation for treatment, success of self-management and empowerment. Future studies should focus on real patients to explore their perceptions and experiences."

"Healthcare professionals should encourage patients to share experiences and concerns about their treatment. They also need to ensure access to MI throughout the process."

"Actions are needed to ensure equal access of MI for all patients and throughout the medication use process to support self-management and empowerment."

"Infrastructural factors leading to poor access to patient and MI and poor adherence, such as lack of update medication lists and treatment plans, and lack of personal communication with care providers should be further investigated from a patient perspective."

To make future research topics more visible, we have summarized the most important ones in a separate paragraph titled "Implications and future research".

DISCUSSION/ Implications and future research (page 14):
"The implementation of the medication use process should be further studied in different patient groups, as also suggested by the Rational Pharmacotherapy Action Plan.(Airaksinen et al. 2018, Hämeen-Anttila et al. 2018) The most urgent need in this respect concerns older people who are at the highest risk for medication-related harm, particularly in primary care and social care institutions. Research should focus on enhancing coordination of care and improving usability of electronic systems supporting the implementation of medication use processes databases and systems.(Toivo et al. 2018, 2019)"

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