# 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)	Two Mental Models of Integrated Care for Advanced Liver Disease: Qualitative Study of Multidisciplinary Health Professionals
AUTHORS	Arney, Jennifer; Gray, Caroline; Walling, A; Clark, Jack; Smith, Donna; Melcher, Jennifer; Asch, Steven; Kanwal, Fasiha; Naik, Aanand

### **VERSION 1 – REVIEW**

REVIEWER	Low, Joseph University College London, Marie Curie Palliative Care Research
	Department
REVIEW RETURNED	30-Jun-2022

	,
GENERAL COMMENTS	This manuscript aims to present two divergent mental models of integrated advanced liver disease care. The authors use in depth interviews with health care providers. They identified that one mental model involved sequential transitions between constituents of care whilst the second model involved synchronous application of the various constituents of care.
	There is a paucity of research in the delivery of supportive care to people with advanced liver disease and I believe this manuscript presents new data and knowledge which sheds light to the tensions between liver and palliative care health professionals in how they deliver care to people with advanced liver disease. I think that the framework of mental models is useful in illustrating the difference in the care provided between the sequential transitions and synchronous models.
	Overall, the manuscript was well-structured and written. The introduction gives a reasonably overview of the issues around providing supportive care for people with advanced liver disease and introduces the concept of mental health model. The methodology is clear on how and where participants were recruited and how data waas collected from them, but more transparency is needed in the data analysis section (see later comments). The results section reads well and the discussion was an accurate interpretation of the findings with ackowledgement of the study limitations and some useful clinical implications. However, I would have liked the authors to expand of where they think future research should go.
	I am happy for this manuscript to be published in this journal as it offers a new insight and knowledge in delivering integrated care to advanced liver patients, on conditions that the the following issues listed below are considered/addressed:
	1) There are parallels between your results regarding sequential and

synchronous care models, to the following framework, the "Transition" Model of Care Versus a "Trajectory" Model, initially proposed by Lynn, J., & Adamson, D. M. (2003). Living well at the end of life. Adapting health care to serious chronic illness in old age. Rand Corp Santa Monica CA., but also highlighted by Murray, S. A., Kendall, M., Boyd, K., & Sheikh, A. (2005). Illness trajectories and palliative care. Bmj, 330(7498), 1007-1011.

You may want to use the framework of these earlier models as part of your development of your mental model. You should at least make some reference to one of these papers in either the introduction and/or discussion (happy for you to make the choice of paper) in the discussion.

## 2) Methodology:

a) To make it easier for readers to follow, highlight the main issues that you covered in your interviews. It will help readers to understand how you got your findings.

#### b) Data analysis.

- i) Reading through this section, it is not clear how your analysis produced your findings. Whilst I accept that qualitative analysis is a predominantly inductive approach, often frameworks/ theories are used as lenses in the way that data is interpreted.
- ii) Please clarify your use of Constant comparative methods, as these are most associated with grounded theory where you are building new theory. Grounded theory uses theoretical sampling in recruiting paricipants, but your sample appears to be a convenience sample. Your sample is also quite large for a grounded theory approach, which tend to have smaller numbers.
- iii) More details on your data management. I assume that you transcribed all the interviews and that you checked the accuacy of the transcription.
- iv) As you mentioned COREQ Qualitative guidelines, have you completed the form. I did not see a copy in my review pack. If you haven't, please complete. You will also find it useful to tighten details in your methodology section.

#### 3 Results:

- i) I assume that the sentence on p10, I3-10 should come under the sub-heading 'Shared views across mental models' and not 'Participant characteristics'.
- 4. Discussion
- i) Some thought in future directions for future research.

### **VERSION 1 – AUTHOR RESPONSE**

Reviewer: 1

Dr. Joseph Low, University College London, UCL - University College London Comments to the Author:

This manuscript aims to present two divergent mental models of integrated advanced liver disease care. The authors use in depth interviews with health care providers. They identified that one mental

model involved sequential transitions between constituents of care whilst the second model involved synchronous application of the various constituents of care.

There is a paucity of research in the delivery of supportive care to people with advanced liver disease and I believe this manuscript presents new data and knowledge which sheds light to the tensions between liver and palliative care health professionals in how they deliver care to people with advanced liver disease. I think that the framework of mental models is useful in illustrating the difference in the care provided between the sequential transitions and synchronous models.

Overall, the manuscript was well-structured and written. The introduction gives a reasonably overview of the issues around providing supportive care for people with advanced liver disease and introduces the concept of mental health model. The methodology is clear on how and where participants were recruited and how data was collected from them, but more transparency is needed in the data analysis section (see later comments). The results section reads well and the discussion was an accurate interpretation of the findings with acknowledgement of the study limitations and some useful clinical implications. However, I would have liked the authors to expand of where they think future research should go.

I am happy for this manuscript to be published in this journal as it offers a new insight and knowledge in delivering integrated care to advanced liver patients, on conditions that the following issues listed below are considered/addressed:

1) There are parallels between your results regarding sequential and synchronous care models, to the following framework, the "Transition" Model of Care Versus a "Trajectory" Model, initially proposed by Lynn, J., & Adamson, D. M. (2003). Living well at the end of life. Adapting health care to serious chronic illness in old age. Rand Corp Santa Monica CA., but also highlighted by Murray, S. A., Kendall, M., Boyd, K., & Sheikh, A. (2005). Illness trajectories and palliative care. Bmj, 330(7498), 1007-1011.

You may want to use the framework of these earlier models as part of your development of your mental model. You should at least make some reference to one of these papers in either the introduction and/or discussion (happy for you to make the choice of paper) in the discussion. RESPONSE: We added a reference to Lynn and Adamson in the discussion. The transition and trajectory models of care described by Lynn and Adamson are parallel to the sequential and synchronous models we identified.

- 2) Methodology:
- a) To make it easier for readers to follow, highlight the main issues that you covered in your interviews. It will help readers to understand how you got your findings. RESPONSE: We included a summary of interview topics in the Methods: Data Collection section of the paper.
- b) Data analysis.
- i) Reading through this section, it is not clear how your analysis produced your findings. Whilst I accept that qualitative analysis is a predominantly inductive approach, often frameworks/ theories are used as lenses in the way that data is interpreted.

RESPONSE: Our approach to analysis best aligns with framework analysis, which is largely deductive, but also allows for incorporation of inductively derived themes. We detail our framework analysis approach in the Methods: Data Analysis section of the paper.

- ii) Please clarify your use of Constant comparative methods, as these are most associated with grounded theory where you are building new theory. Grounded theory uses theoretical sampling in recruiting participants, but your sample appears to be a convenience sample. Your sample is also quite large for a grounded theory approach, which tend to have smaller numbers. RESPONSE: We removed the reference to the constant comparative approach and instead, detail a framework analysis approach in the Methods: Data Analysis section of the paper. Framework analysis is a comparative form of thematic analysis, so we reference relevant research on the two related methods in the paragraph. Our data collection and analysis relied heavily on the integrated model of AdvLD; the model shaped our interview guide and our analysis.
- iii) More details on your data management. I assume that you transcribed all the interviews and that

you checked the accuracy of the transcription.

RESPONSE: All interviews were transcribed and interviewers confirmed accuracy of all transcripts. We included this statement at the end of the Methods: Data Collection section.

iv) As you mentioned COREQ Qualitative guidelines, have you completed the form. I did not see a copy in my review pack. If you haven't, please complete. You will also find it useful to tighten details in your methodology section.

RESPONSE: We completed and uploaded the COREQ checklist and tightened the methods section.

#### 3 Results:

i) I assume that the sentence on p10, I3-10 should come under the sub-heading 'Shared views across mental models' and not 'Participant characteristics'.

RESPONSE: We moved these lines into the "Shared views" subsection of the Results and reworked that section as necessary.

#### 4. Discussion

i) Some thought in future directions for future research.

RESPONSE: We state future directions in the final two sentences of the paper on p.19.

#### **VERSION 2 - REVIEW**

REVIEWER	Low, Joseph University College London, Marie Curie Palliative Care Research Department
REVIEW RETURNED	12-Aug-2022

GENERAL COMMENTS	I have read through both the revised manuscript and the authors'
	responses to my original comments. I am happy that they satisfy my
	initial concerns and am happy to accept this version of the
	manuscript for publication.