PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Self-Identified Barriers to Rural Mental Health Services in Iowa by Older Adults with Multiple Comorbidities: Qualitative Interview Study
AUTHORS	Pass, Lauren; Kennelty, Korey; Carter, Barry

VERSION 1 – REVIEW

REVIEWER	Elizabeth Sweeney Covera Health United States
REVIEW RETURNED	06-Mar-2019

GENERAL COMMENTS	Summary: This paper provides a description of a qualitative interview study that was conducted amongst participants in Iowa living in rural areas who had multiple comorbidities. The interviews aimed to find self-identified barriers to mental health care as evaluated by the Penchansky & Thomas theory of access and analytic framework. The paper is well written and the methods are described well. A few comments for improvement follow: Comments: (1) Repeated sentence in the Objectives section of the Abstract (2) Was the ICARE study restricted to rural patients? If so, please mention this in the inclusion criteria for the ICARE study. If not, please define how you determined a rural population for your study. (3) This study was restricted to adults age 50 and over. Some mention that the population is older adults should occur throughout the manuscript and in the title. Some of the barriers to care could be the result of patients being older (for example not knowing how to use internet search) and this should be acknowledged throughout. (4) Did all patients in the study confirm that they had a self-reported diagnosis of anxiety or depression or a diagnosis of anxiety and depression from a professional? It isn't clear that everyone included in the study has depression or anxiety from the numbers that you provided in the table. (i.e. only 11 patients ever had a mental health diagnosis). (5) Another limitation is a response to survey bias — those patients who responded and agreed to be interview may be different from the general population, especially in the case of mental health. Please include this in the discussion.

REVIEWER	Elizabeth Unni Roseman University of Health Sciences, USA
REVIEW RETURNED	14-Mar-2019

GENERAL COMMENTS	Well designed study. Here are few suggestion to strengthen the manuscript. 1. Data collection: Was there any reasons why the interview guide was not based on the proposed theoretical model? It is hard to decipher that from the interview guide. 2. Please add interview guide Appendix in the text. 3. Page 9: Lines 47 to 51: Please clarify. The statement is not clear. 4. Results: Majority of the respondents were female with low education. Does this match with the national statistics on rural mental health? Please explain. 5. Table 2 Dimensions: A suggestion that awareness and acceptability comes before accessibility. It makes it more logical. 6. In the methodology, it was stated that one of the goal was to identify the barriers and facilitators to mental health. So, a table with barriers and facilitators can be a good addition to the usefulness of this manuscript. 7. Were there any suggestions made by the respondents about how to develop intervention? For example, telemedicine. Was there any discussion about such technologies? 8. Did you reach data saturation with these 19 interviews?

REVIEWER	Hannah Beks Deakin University, Geelong, Victoria, Australia
REVIEW RETURNED	01-May-2019

GENERAL COMMENTS	Thank you for your research exploring a very important (and under-studied) patient cohort. Please find below comments for your consideration, including the suggestion to revise the process of developing themes through deductive analysis. (1) Abstract: Remove duplicate sentence - lines 13-20 (p.2) Penchansky 'and' Thomas not Penchansky & Thomas Be consistent with use of numerals or words to report quantity of participants in lines 28 and 41 (p.2) and throughout manuscript. Revise sentence structure under 'conclusions' (p.3) Re-consider terminology 'of color' to that which may be more acceptable by international community e.g. culturally and linguistically diverse people, other ethnic backgrounds or cultures etc. line 35 (p.3) and in discussion section. (2) Introduction: Line 6 (p.4) Introduce abbreviation in first instance eg. United States (US) Lines 49-54 (p.4) Use of the term 'chronically-ill rural patients' – does this mean patients with physical chronic illnesses, mental health chronic illnesses or both mental and physical co-morbidities? Please clarify. Line 5 (p.5) Suggest removing 'in rural Iowans'- yes, this is your sample but your research objectives as per your abstract are much broader than this sample e.g. 'the aim of this study was to determine barriers to finding, receiving and adhering to mental health treatments in this population (you've defined as rural,

	chronically-ill patients) to inform future interventions delivering services'. Line 35 (p.5) How have the dimensions of access being defined differently by authors? Line 37 (p.5) Provide a reference Line 49 (p.5) Spelling error – vice-versa Remove duplicate words in sentences (p.6 lines 22-25 'disparities') (p.5 lines 30-35 'differently by different authors') Lines 32-41 (p. 6) Provide references for the 'few studies' and sentence 'rural patients with multiple co-morbidities…' (3) Methods: Lines 50-52 (p. 6) Update your abstract to reflect 'we conducted a qualitative study of barriers and facilitators to rurally-based mental health care'. Abstract currently only discusses exploration of barriers as research objective. Line 52 (p.6) Revise use of terminology 'collected semi-structured interviews'. Interviews are not collected in qualitative research rather conducted between a researcher and participant. Lines 21-25 (p.7) Why were interviews conducted over the phone and not in person? Why was deductive analysis (i.e. to test an existing theory) used? Lines 30-51 (p.7) Be consistent with terms used, e.g. patients or subjects Lines 35-36 (p.9) What type of codes were used? (descriptive? In Vivo?) Line 53-54 (p.9) Why were similarities grouped into themes? It is also important to consider the differences across interviews and coding approaches and how these provide insight into the phenomena of interest (i.e. maximum variation). (4) Results: Where are the themes developed from this research? The results section is an elaboration of table 2 which provides the dimensions of access according to existing theory, definitions of these dimensions and a list of patient-reported barriers (where are the enablers?), rather than extending or providing rich insight into existing theory as per the method of deductive analysis. The headings used in the results are the existing dimensions of access rather than themes developed through the research process as per the methods described by the author. It reads as though the author is simply reinstating the existing theoretical dimensions of access rather than themes developed through this research. Suggestion to review the deductive thematic analysis method and development of themes. (5) Discussion: Line 3-4 (p.27) revise sentence structure Line 37-40 (p.27) why are small sample sizes appropriate for qualitative work? There are many factors which determine the appropriateness of a qualitative sample size e.g. methodology, phenomena of interest, scope of research question etc. (small is not necessarily always appropriate).

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Elizabeth Sweeney
Institution and Country: Covera Health - United States
Please state any competing interests or state 'None declared': None

Please leave your comments for the authors below
Summary: This paper provides a description of a qualitative interview study that was conducted amongst participants in Iowa living in rural areas who had multiple comorbidities. The interviews aimed to find self-identified barriers to mental health care as evaluated by the Penchansky & Thomas theory of access and analytic framework. The paper is well written and the methods are described well. A few comments for improvement follow:

Comments:

(1) Repeated sentence in the Objectives section of the Abstract
Thank you for catching this. The Repeat sentence was deleted.

(2) Was the ICARE study restricted to rural patients? If so, please mention this in the inclusion criteria for the ICARE study. If not, please define how you determined a rural population for your study.
The following sentence was added:
"Further, the 12 ICARE sites were selected because they provided care to predominately rural patients."

(3) This study was restricted to adults age 50 and over. Some mention that the population is older adults should occur throughout the manuscript and in the title. Some of the barriers to care could be the result of patients being older (for example not knowing how to use internet search) and this should be acknowledged throughout.
We agree with the suggestion. The title has been changed to:
"Self-Identified Barriers to Rural Mental Health Services in Iowa by Older Adults with Multiple Comorbidities: Qualitative Interview Study".
We have now also included in the discussion the following paragraph:
"It should be noted that as our study was restricted to participants over the age of 50, the barrier of awareness (such as the ability to use internet searches) could be contributed to participants' age rather than chronic illness or rural status. Nevertheless, the relative invisibility of mental health services reported by this sample may be an important finding for providers and public health practitioners who wish to promote local services."

(4) Did all patients in the study confirm that they had a self-reported diagnosis of anxiety or depression or a diagnosis of anxiety and depression from a professional? It isn't clear that everyone included in the study has depression or anxiety from the numbers that you provided in the table. (i.e. only 11 patients ever had a mental health diagnosis).
To be included in the study, the participants had to either have a self-reported diagnosis of anxiety or depression or a diagnosis of anxiety and depression from a professional during the ICARE study. However, participants were also allowed to confirm their mental health histories during the interview, during which not all participants chose to self-identify with a history of mental health diagnosis. To clarify this, the following statement was added:
"At the time of the interview, most (73%), but not all, patients confirmed ever having a mental health diagnosis, despite meeting at least one of the ICARE criteria."

(5) Another limitation is a response to survey bias — those patients who responded and agreed to be interview may be different from the general population, especially in the case of mental health. Please include this in the discussion.
Thank you for the comment. We added the following to address this:
"Further, given the low response rate, it is possible that our findings contain selection bias, and as such the experiences represented here differ considerably from the general population."

We also added a line in the summary of limitations in the introduction.

Reviewer: 2
Reviewer Name: Elizabeth Unni
Institution and Country: Roseman University of Health Sciences, USA
Please state any competing interests or state 'None declared': None declared.

Please leave your comments for the authors below
Well designed study. Here are few suggestion to strengthen the manuscript.

1. Data collection: Was there any reasons why the interview guide was not based on the proposed theoretical model? It is hard to decipher that from the interview guide.
This was a secondary analysis of ICARE; the theoretical model was chosen after study activities were completed.

2. Please add interview guide Appendix in the text.
This was added.

3. Page 9: Lines 47 to 51: Please clarify. The statement is not clear.
We can't find the line this is referencing. We found a line and changed it for clarity. It now reads:
"Our findings indicate that intervention across multiple domains of access is necessary for successful long-term management of mental health disorders for patients with multiple chronic comorbidities in Iowa."

4. Results: Majority of the respondents were female with low education. Does this match with the national statistics on rural mental health? Please explain.
It is difficult to find conclusive data about the prevalence of mental health disorders in rural areas because there has been little recent literature on the topic in the US. 10 years ago there was data suggesting that suicide rates, depression, and anxiety may be higher in rural areas, but it is unclear if these trends have continued or if these rates can be attributed to locality rather than other factors, such as the availability of mental health treatments or socioeconomic factors.
However, on a national level, it should be noted that depression and anxiety diagnoses indeed appear to be more common in women and people with lower educational attainment. Specific anxiety and depression diagnoses also vary by race. These differences may reflect different attitudes and behaviors in help-seeking, which we addressed in our previous submission in the discussion section. Since a diagnosis of a mental health disorder is contingent on access to care, these differences may also reflect inequalities in access to care rather than actual differences in prevalence, which we also addressed in the above section. The educational attainment of the participants in this study may reflect national trends of similar to that reported in this study, but it may also reflect the composition of the original ICARE study.

5. Table 2 Dimensions: A suggestion that awareness and acceptability comes before accessibility. It makes it more logical.
We respectfully decline making this change. The order presented in the paper reflects the order of our two main sources for our analytic framework, Penchansky and Thomas and Saurman. We would like to keep the table in the order that it is so that is consistent with the literature we cited.

6. In the methodology, it was stated that one of the goal was to identify the barriers and facilitators to mental health. So, a table with barriers and facilitators can be a good addition to the usefulness of this manuscript.
Table 2 has been revised to include facilitators, as well as in the body of the results section.

7. Were there any suggestions made by the respondents about how to develop intervention? For example, telemedicine. Was there any discussion about such technologies?
There was no such suggestion made throughout the bulk of interviews. One respondent suggested that a hotline to call in moments of mental health distress could be helpful, and another respondent suggested provided an updated resource list for patients to find mental health providers. The most frequent suggestion for intervention by respondents was that providers would listen to them, which we discussed in the results section.

8. Did you reach data saturation with these 19 interviews?
Yes. This was added on line 195-196:
Analysis stopped after data saturation was reached.

And again at 204-205:
Four patients were re-interviewed for follow-up questions, resulting in a total of 19 interviews, at which data saturation was reached.

Reviewer: 3
Reviewer Name: Hannah Beks
Institution and Country: Deakin University, Geelong, Victoria, Australia
Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below
Thank you for your research exploring a very important (and under-studied) patient cohort. Please find below comments for your consideration, including the suggestion to revise the process of developing themes through deductive analysis.

(1) Abstract:

Remove duplicate sentence - lines 13-20 (p.2)
This sentence was removed.

Penchansky 'and' Thomas not Penchansky & Thomas
This was corrected in the abstract.

Be consistent with use of numerals or words to report quantity of participants in lines 28 and 41 (p.2) and throughout manuscript.
We chose to go with numerals wherever possible.

Revise sentence structure under ‘conclusions’ (p.3)
Revised. It now reads:

Conclusions: Our findings indicate that intervention across multiple domains of access is necessary for successful long-term management of mental health disorders for patients with multiple chronic comorbidities in Iowa.

Re-consider terminology ‘of color’ to that which may be more acceptable by international community e.g. culturally and linguistically diverse people, other ethnic backgrounds or cultures etc. line 35 (p.3) and in discussion section.
We agree with and appreciate the suggestion. We changed the term to “racial and ethnic backgrounds” in both sections.

(2) Introduction:

Line 6 (p.4) Introduce abbreviation in first instance eg. United States (US)
Thank you for pointing this out. The suggested change has been made.

Lines 49-54 (p.4) Use of the term ‘chronically-ill rural patients’ – does this mean patients with physical chronic illnesses, mental health chronic illnesses or both mental and physical co-morbidities? Please clarify.
This has been clarified. The section now reads:
In addition to disparities in mental health services, rural populations are also disproportionately affected by chronic physical illnesses. Conditions such as cardiovascular disease, stroke, and diabetes often have higher prevalence and have worse outcomes in the presence of mental health disorders. 10-15 In fact, the greater the severity of mental illness, the higher the incidence and excess mortality from many chronic physical illnesses, such as cardiovascular and respiratory diseases

Line 5 (p.5) Suggest removing ‘in rural Iowans’- yes, this is your sample but your research objectives as per your abstract are much broader than this sample e.g. ‘the aim of this study was to determine barriers to finding, receiving and adhering to mental health treatments in this population (you’ve defined as rural, chronically-ill patients) to inform future interventions delivering services’.
The requested change was made.

Line 35 (p.5) How have the dimensions of access being defined differently by authors?
The following explanation has been given:
For instance, Penchansky and Thomas uses the term “accommodation” to refer to organizational factors that influence access, whereas Peters places organizational factors under “availability”.

Line 37 (p.5) Provide a reference
We added references as requested.

Line 49 (p.5) Spelling error – vice-versa
The requested change has been made.

Remove duplicate words in sentences (p.6 lines 22-25 ‘disparities’) (p.5 lines 30-35 ‘differently by different authors’)
The requested change has been made.

Lines 32-41 (p. 6) Provide references for the ‘few studies’ and sentence ‘rural patients with multiple co-morbidities…’
What was meant by this line was that there is little research on this topic. The sentence has been changed for clarity to:
“there is a paucity of research grounding the utility of these theories in analyzing patients’ lived experiences”

(3) Methods:

Lines 50-52 (p. 6) Update your abstract to reflect ‘we conducted a qualitative study of barriers and facilitators to rurally-based mental health care’. Abstract currently only discusses exploration of barriers as research objective.
The requested change has been made.

Line 52 (p.6) Revise use of terminology ‘collected semi-structured interviews’. Interviews are not collected in qualitative research rather conducted between a researcher and participant.
The requested change has been made.

Lines 21-25 (p.7) Why were interviews conducted over the phone and not in person? Why was deductive analysis (i.e. to test an existing theory) used?
The following explanation has been added to the paper:
“We conducted semi-structured interviews over the phone to allow the researchers to easily interview ICARE patients from different locations across the state. Interviews were analyzed by applying a modified Penchansky & Thomas’s theory of access as an analytical framework. This framework was chosen to guide our qualitative investigation because 1) this framework is commonly used in public health discourse on problems of healthcare access and 2) along with the dimension of awareness, it encompasses multiple broad pathways by which access can be hindered.”

Lines 30-51 (p.7) Be consistent with terms used, e.g. patients or subjects
The requested change has been made here and throughout the paper wherever logically possible.

Lines 35-36 (p.9) What type of codes were used? (descriptive? In Vivo?)
The codes were descriptive. This is now mentioned here:
The first and second authors developed a codebook of descriptive codes that contained 6 broad dimensions of access previously described in the literature as categories for analysis—accessibility, availability, affordability, accommodation, acceptability, and awareness.

Line 53-54 (p.9) Why were similarities grouped into themes? It is also important to consider the differences across interviews and coding approaches and how these provide insight into the phenomena of interest (i.e. maximum variation).
We agree and note that this was poor wording on our part; similarities and differences between patient narratives were indeed compared in our analysis. The section has been altered for clarity:

“Conversely, text was coded as a barrier if it prevented the patient from receiving or sustaining mental healthcare. When all transcripts were coded, themes were defined by comparing barriers and facilitators within each category for similarities and differences endorsed by patients across interviews. Analysis stopped after data saturation was reached. Themes with illustrative quotations are described in the results section.”

(4) Results:
Where are the themes developed from this research? The results section is an elaboration of table 2 which provides the dimensions of access according to existing theory, definitions of these dimensions and a list of patient-reported barriers (where are the enablers?), rather than extending or providing rich insight into existing theory as per the method of deductive analysis. The headings used in the results are the existing dimensions of access rather than themes developed through the research process as per the methods described by the author. It reads as though the author is simply reinstating the existing theoretical dimensions of access rather than themes developed through this research. Suggestion to review the deductive thematic analysis method and development of themes.

In response to the suggestions made in this comment and a previous comment requesting the addition of facilitators, we made substantial revisions to the results section of the manuscript. Table 2 has been revised to include sub-themes and facilitators. Sub-themes have been added to their corresponding sections in the text.

(5) Discussion:
Line 3-4 (p.27) revise sentence structure
The sentence has been revised:
Thus, utilizing multiple pathways to deliver mental health services either locally or remotely may be especially important for rural individuals with limited mobility.

Line 37-40 (p.27) why are small sample sizes appropriate for qualitative work? There are many factors which determine the appropriateness of a qualitative sample size e.g. methodology, phenomena of interest, scope of research question etc. (small is not necessarily always appropriate).

We agree. This is poor wording on our part. The sentence now reads:
"Second, while small sample sizes are often used in qualitative work due to the volume of data generated in qualitative analysis, we only recruited ~12% and ultimately interviewed ~9% of eligible ICARE patients"

VERSION 2 – REVIEW

REVIEWER	Elizabeth Sweeney United States
REVIEW RETURNED	02-Sep-2019

GENERAL COMMENTS	Thank you for address my comments