PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

Title (Provisional)

Influencing factors of health promotion behaviour in patients with aortic dissection: A qualitative study using the COM-B model

Authors

Gao, Jia; Pan, Qiong; Li, Sai Lan; Chen, Shaolin; Luo, Baolin; Chen, Liangwan; Lin, Yanjuan

VERSION 1 - REVIEW

Reviewer	**1**
Name	**Kruger, Iolanthe**
Affiliation	**North-West University - Potchefstroom Campus, AUTHeR**
Date	**20-Jun-2023**
COI	**None**

General

- Please attend to spelling and grammar.

Methodology

- The authors indicate that purposive sampling was used. However, there need to be details about the specific techniques used. For example, were the authors interested in maximum variation sampling or aimed for a more homogenous sample? Or did the authors focus on criteria sampling only? Please provide more detail about the sampling technique.

Participants

- Please indicate whether the participants were diagnosed with Stanford Type A or Stanford Type B AD. I assume it will be Type B since the inclusion criteria indicate that the presence of the disease should be >3 months. The perspective of patients with different types will differ.

- Table 1 indicates that both Type and Type B participants were included. This must be discussed/defined in this section. Have the authors considered how the type of AD will influence the perspectives of people and their health-promoting behaviours?

- Type A AD usually requires immediate surgical intervention – i.e. it is more severe than Type B. According to the health belief model, the severity of the disease will most likely influence behaviour.

References

- Some references are outdated (older than 5 years) – references # 1,2, 7, 10, 11 and 22. Especially when referring to statistics. For example, #6

Reviewer	**2**
Name	**Snaterse, Marjolein**
Affiliation	**Amsterdam University of Applied Sciences, Faculty of Health**
Date	**06-Jul-2023**
COI	**none**

Properly executed and described study. A few things are missing.

In the methods section: How were patients recruited and how was purposive sampling performed?

Discussion: Describe the limitations in line with qualitative research criteria. The conclusion is too easy and weak. Conclude what new knowledge this research provides

Please check the references on author guidelines, DOI and completeness.

Reviewer	**3**
Name	**Shih, Patti**
Affiliation	**University of Wollongong, School of Health & Society**
Date	**10-Jul-2023**
COI	**None**

This qualitative study of 16 AD patients' health promoting behaviour applies the COM-B model in a hospital in China. While the study is well-designed and methodologically sound, the results were not analysed with enough depth to offer originality of insight. The English expression used in the manuscript needs more reworking to improve readability and flow.

The introduction provides a brief review of the background, however, it does not identify a significant research problem. Although the lack of qualitative research regarding the

perspectives and experiences of patients and the application of COM-B is identified as a study gap, dearth of research in itself does not render a clearly justified research problem - what are the key issues here in terms of informing clinical practice or patient support? There seems to be a lack of literature review that identifies the key challenges of health promotion in AD. There is also limited critical engagement with COM-B - why is it an innovative/stand out model compared to others that could be applied, that could perhaps close the gap/respond to the key challenges clinicians and patients face?

The methods section is mostly clearly written. A bit more information is needed about what language were the interviews conducted in? If not in English, what translational processes were used? Can the authors discuss more about the study setting hospital? What kind of social and clinical context does the study hospital operate in; what is the typical patient cohort in the unit?

Table 1 (participant demography) - a few points need clarification, e.g. what does 'Time of AD diagnosis' refer to in terms of the numbers presented? What does 'type of disease - A or B' refer to?

The themes are organised against the COM-B model, which makes sense given that it is the key framework applied. However, from here, a deeper application of the COM-B model seems to be missing. The authors report a lengthy list of themes and subthemes in quick succession, without enough interpretation about the significance of the themes. Each theme/subtheme is quickly and briefly glossed over, so it leaves the reader unclear about why the data is important.

The discussion raises some interesting points and useful recommendations for clinical practice and patient support. However, I found the discussion section unstructured and difficult to read as it contained a large number of very short small arguments, without depth of analysis or a flow in terms of well developed ideas. Again, like the results section, the authors might find it useful by amassing fewer key arguments but elaborating each in more depth, rather than spreading themselves too thin by making many short but undeveloped points.

Given that COM-B is central to the study, there was very little discussion and in-depth application of COM-B in the discussion. Each component of COM-B could be given more analysis and brought together in the discussion. This could be a more coherent way to structure the discussion and do more justice to the application of COM-B than currently presented.

VERSION 1 - AUTHOR RESPONSE

Response to reviewer #1:

General

- Please attend to spelling and grammar.

Response: Thank you very much for your advice. We've checked the full text for grammar and spelling.

Methodology

- The authors indicate that purposive sampling was used. However, there need to be details about the specific techniques used. For example, were the authors interested in maximum variation sampling or aimed for a more homogenous sample? Or did the authors focus on criteria sampling only? Please provide more detail about the sampling technique.

Response: Thank you for your constructive comments. The maximum variation sampling technique was also applied to recruit a heterogeneous sample of participants across gender, age, education levels, place of residence, classification of AD and time of AD diagnosis. (page 4, lines 4)

Participants

- Please indicate whether the participants were diagnosed with Stanford Type A or Stanford Type B AD. I assume it will be Type B since the inclusion criteria indicate that the presence of the disease should be >3 months. The perspective of patients with different types will differ.

- Table 1 indicates that both Type and Type B participants were included. This must be discussed/defined in this section. Have the authors considered how the type of AD will influence the perspectives of people and their health-promoting behaviours?

- Type A AD usually requires immediate surgical intervention – i.e. it is more severe than Type B. According to the health belief model, the severity of the disease will most likely influence behaviour.

Response: Thank you very much for your valuable comments. The views of patients with different types of AD do vary, but given the limited research on health promotion behaviour in patients with aortic dissection, we used maximum variation sampling technique, so participants

in this study included patients with AD type A and B to get a more comprehensive perspective of health promotion behaviour in different AD patients. We have defined the concept of Type A and Type B in the inclusion criteria (page 4, lines 19). Stanford Type A AD was defined as any non-traumatic dissection involving the ascending aorta. Stanford Type B AD was defined as any non-traumatic dissection involving the descending aorta.

References

- Some references are outdated (older than 5 years) – references # 1,2, 7, 10, 11 and 22. Especially when referring to statistics. For example, #6.

Response: Thank you very much for your valuable comments. We have tried our best to update the references that are older than 5 years, but there are still some literatures that have not been updated, references #9, 13, which are classic and important literatures in related fields.

Response to reviewer #2

Properly executed and described study. A few things are missing.

In the methods section: How were patients recruited and how was purposive sampling performed?

Discussion: Describe the limitations in line with qualitative research criteria. The conclusion is too easy and weak. Conclude what new knowledge this research provides

Please check the references on author guidelines, DOI and completeness.

Response: Thank you very much for your valuable comments. According to your suggestion, we have revised the limitations, conclusion and references. You can see our revision in the corresponding part of the manuscript. The following is the revised content.1.Purposive and convenience sampling was employed to select the potential participants through the outpatient and ward of cardiac surgery department of Fujian Medical University Union Hospital from October 2022 to February 2023. The maximum variation sampling technique was also applied to recruit a heterogeneous sample of participants across gender, age, education levels, place of

residence, classification of AD and time of AD diagnosis. 2.Our study has some limitations. Firstly, the study was qualitative and failed to explore the extent to which ability, opportunity, and motivation factors influenced patients' health promotion behaviour. Secondly, the study relied on patients' self-reported data, which may be influenced by memory bias and social desirability bias. In addition, the study had a small sample and patients were recruited from the hospital, while patients from other settings, such as communities, were not recruited. Thus generalizability of these findings to other other settings may be limited. Therefore, it is necessary to conduct quantitative and longitudinal studies with large samples in the future to further explore the research results.

Response to reviewer #3

This qualitative study of 16 AD patients' health promoting behaviour applies the COM-B model in a hospital in China. While the study is well-designed and methodologically sound, the results were not analysed with enough depth to offer originality of insight. The English expression used in the manuscript needs more reworking to improve readability and flow.

Response: Thank you very much for your valuable comments. We reanalyzed the results in depth. We are very sorry that the English expression is flawed, and we have carefully revised the paper to improve grammar and readability.

The introduction provides a brief review of the background, however, it does not identify a significant research problem. Although the lack of qualitative research regarding the perspectives and experiences of patients and the application of COM-B is identified as a study gap, dearth of research in itself does not render a clearly justified research problem - what are the key issues here in terms of informing clinical practice or patient support? There seems to be a lack of literature review that identifies the key challenges of health promotion in AD. There is also limited critical engagement with COM-B - why is it an innovative/stand out model compared to others that could be applied, that could perhaps close the gap/respond to the key

challenges clinicians and patients face?

Response: Thank you for your constructive comments. We have added to the introduction a review of the literature on health promotion in AD patients (page 3, lines 1) and the innovation of COM-B model(page 3, lines 12).1.AD survivors face many challenges, such as postoperative complications, impairment of physical function, decreased quality of life, and psychological trauma. Therefore, the health promotion of AD is one of the important means to help them recover from the disease.2.COM-B model can provide scientific advice on how to achieve the expected behavior by studying the ability, motivation and opportunity factors of the object's behavior, and provide theoretical guidance for the design of behavioral intervention, which is also its advantage from other theoretical models.

The methods section is mostly clearly written. A bit more information is needed about what language were the interviews conducted in? If not in English, what translational processes were used? Can the authors discuss more about the study setting hospital? What kind of social and clinical context does the study hospital operate in; what is the typical patient cohort in the unit?

Response： Thank you very much for your insight and valuable comments.1. The interviews and data analysis were undertaken in the source language (Chinese), themes and quotes were subsequently translated into the target language (English). The quotations were translated into English by professional translators who were not part of the research team using the forward-backward method. See the Data analysis section of the Methods for details (page 5, lines 9) . 2. This research hospital is one of the largest public comprehensive tertiary hospitals located in the southeast China's Fujian Province, and it is also the National Regional Medical Center and National Cardiovascular Regional Medical Center in China. Cardiac surgery department is the dominant department in this hospital and the largest heart center in southeast China, which

performs more than 3000 cardiovascular surgeries annually. Aortic dissection, heart failure, valvular heart disease, coronary heart disease and congenital heart disease are typical patient cohort in this center. See the Settings section of the Methods for details(page 4, lines 8).

Table 1 (participant demography) - a few points need clarification, e.g. what does 'Time of AD diagnosis' refer to in terms of the numbers presented? What does 'type of disease - A or B' refer to?

Response： Thank you very much for your valuable comments. 'Time of AD diagnosis' refer to the duration of the disease from the time of diagnosis to the present day, and 'disease type-A or B' refers to the disease classification of AD, clinically, according to whether the dissection involves the root of the artery, the ascending aorta or the aortic arch, it can be divided into Stanford type A and B. The definition of dissection classification is provided in the inclusion criteria in the Methods.

The themes are organised against the COM-B model, which makes sense given that it is the key framework applied. However, from here, a deeper application of the COM-B model seems to be missing. The authors report a lengthy list of themes and subthemes in quick succession, without enough interpretation about the significance of the themes. Each theme/subtheme is quickly and briefly glossed over, so it leaves the reader unclear about why the data is important. The discussion raises some interesting points and useful recommendations for clinical practice and patient support. However, I found the discussion section unstructured and difficult to read as it contained a large number of very short small arguments, without depth of analysis or a flow in terms of well developed ideas. Again, like the results section, the authors might find it useful by amassing fewer key arguments but elaborating each in more depth, rather than spreading themselves too thin by making many short but undeveloped points.

Given that COM-B is central to the study, there was very little discussion and in-depth application of COM-B in the discussion. Each component of COM-B could be given more analysis and brought together in the discussion. This could be a more coherent way to structure the discussion and do more justice to the application of COM-B than currently presented.

Response： Thank you very much for giving us such detailed and professional comments. We

have reanalyzed and reorganized the results and discussions. The discussion section focuses on COM-B's capabilities, opportunities, and motivational factors, and some of the scattered topics in the original draft have been appropriately removed to allow for in-depth analysis and discussion of the core factors that influence the health promotion behaviour of patients with aortic dissection. (page 8-19)

VERSION 2 - REVIEW

Reviewer	**1**
Name	**Kruger, Iolanthe**
Affiliation	**North-West University - Potchefstroom Campus, AUTHeR**
Date	**04-Oct-2023**
COI	**None**

- Please attend to spelling and grammar.

- It is strongly recommended that a native English speaker review the manuscript.

- Please provide references for statements - including the tool used for reporting this qualitative research.

- The qualitative research approach is not indicated.

- Indicate the final sample size in the Methods section.

- Rather refer to case-study sampling rather than convenience sampling.

- The recruitment process should be discussed in more detail.

- Was ethical approval obtained from an IRB?

- Please indicate who performed the data analysis. Was a co-coder involved? How were discrepancies handled?

- Did the authors make use of any field notes or observational notes?

- Discuss the approach used to perform the content analysis.

- Please discuss how the authors ensured rigour throughout the research process.

- There is a discrepancy regarding the type of data collection used: under the Method section, the authors indicate that semi-structured interviews were used to collect data.

However, under section 5 (Conclusion), the authors indicate that they used in-depth interviews. These two methods are not the same.

Reviewer	**3**
Name	**Shih, Patti**
Affiliation	**University of Wollongong, School of Health & Society**
Date	**16-Oct-2023**
COI	**None**

The English expression and style of the article has improved somewhat, but still needs a bit more work and proof reading to make it more academic and readable.

For example

p.4, line 40 – 'disastrous' is very unacademic in this context.

p.6. line 38 – 'independent and quiet clinic' – seems an unusual expression. can the authors explain what this means? Is it so that the interviews could be conducted in privacy?

p.6. line 46 – 'conducted in the Chinese' – suggest deleting 'the'. Would it be helpful to add the type of Chinese, e.g. Mandarin, Cantonese etc if applicable

a bit of jumping between past and present tense (e.g. p.11 line 12 vs 27).

p.19 line 17 – 'indispensable' – suggest use 'essential'

p.20 line 10 – 'staffs' – no s

p.22 lines 4 – 17 – do not capitalise key themes

Some quite unusual use of terms that needs to be better translated or aligned with English academic literature in this field.

p.13 line 55 – 'sense of motivation' – do the authors mean 'perception'?

p.14 line 46 – 'Automatic Motivation' – another unusual term. Can the authors explain what this refers to. The analysis seems to suggest something like 'patient agency' but it is yet unclear.

p.18, line 4 – 'Opportunity factors' – are the authors referring to 'facilitators' or 'drivers' of behavioural change or something like that?

Can the authors engage with some of the patient behaviour, patient motivation and health promotion literature to find a more common terms and to develop their analysis? I am suggesting here that both use of term and engagement with the literature is needed.

Stanford Type A & B – apart from location of the tear as the biomedical definition, what exactly is the clinical significance of the different types? Are they managed differently? Do

they have different symptoms and health promotion needs? The introduction seems to suggest so, but a bit more explanation is needed.

Results - Suggest reporting patient gender and age, as well as their 'number' after illustrative quotes. Since they are de-identified to protect their privacy and confidentiality, authors could mention this in the methods section.

While the study is very interesting, the analysis and significance of the findings is modest. More engagement with the literature in this field would greatly improve the depth and significance of the analysis.

VERSION 2 - AUTHOR RESPONSE

Response to reviewer #1:

We really appreciate you for your carefulness and conscientiousness. Your suggestions are really valuable and helpful for revising and improving our paper. According to your suggestions, we have made the following revisions on this manuscript:

1. Please attend to spelling and grammar.

Response: Thank you very much for your advice. We've checked the full text for grammar and spelling.

2. It is strongly recommended that a native English speaker review the manuscript.

Response: Thank you very much for your advice. We've invited native English speakers to review the manuscript.

3. Please provide references for statements - including the tool used for reporting this qualitative research.

Response: Thank you very much for your valuable comments. This study used the Comprehensive Reporting Standard for Qualitative, a 32-item checklist. (page 5, line 14)

4. The qualitative research approach is not indicated.

Response: Thank you very much for your valuable comments. This study used descriptive qualitative research. (page 5, line 14)

5.Indicate the final sample size in the Methods section.

Response: Thank you for your constructive comments. Sample size is based on data saturation.

When the number of interviewees reached 16, no new topics were separated, so this study finally interviewed 16 cases. (page 6, line 12)

6. Rather refer to case-study sampling rather than convenience sampling.

Response: Thank you very much for your valuable comments. We have modified the sampling method for case study sampling. (page 6, line 4)

7. The recruitment process should be discussed in more detail.

Response: Thank you for your constructive comments. We have discussed the recruitment process in more detail. This is visible in the Sampling and recruitment section .(page 5, line 18)

8. Was ethical approval obtained from an IRB?

Response: Thank you very much for your advice. This study was approved by the Ethics Committee of the Fujian Medical University Union Hospital (2022KY189). (page 6, line 15)

9. Please indicate who performed the data analysis. Was a co-coder involved? How were discrepancies handled?

Response: Thank you for your constructive comments. Data analysis was carried out independently by two researchers. When differences were encountered, they were resolved through discussion at a research group meeting to ensure the reliability of the conclusions (page 7, line 10)

10. Did the authors make use of any field notes or observational notes?

Response: Thank you very much for your advice. We took on-the-spot notes to record non-verbal materials such as tone of voice, facial expressions and body movements of the interviewees. (page7, line 7)

11. Discuss the approach used to perform the content analysis.

Response: Thank you very much for your valuable comments. As the COM-B model was used as the theoretical framework in this study, the directed content analysis approach was used. (page7, line 14)

12.Please discuss how the authors ensured rigour throughout the research process.

Response: Thank you for your constructive comments. The rigour of this study was achieved

in these following ways: First, the COREQ criteria were used to guide the reporting of this study. Second, a heterogeneous sample was deliberately chosen to ensure adequate representation of diverse perspectives and experiences. Additionally, field notes were consistently maintained to ensure comprehensive and detailed data collection. Finally, two researchers conducted independent data analysis and discussed with the research team to form the final coding and themes. (page8, line 3)

13. There is a discrepancy regarding the type of data collection used: under the Method section, the authors indicate that semi-structured interviews were used to collect data. However, under section 5 (Conclusion), the authors indicate that they used in-depth interviews. These two methods are not the same.

Response: Thank you very much for your valuable comments. We are very sorry that we described the wrong method, and we have deleted the wrong method in the Conclusion section. (page20, line 10)

Response to reviewer #2:

We sincerely appreciate your meticulous identification of our grammatical issues and the thoughtful recommendations you provided. We have revised the article based on your valuable suggestions. Your comments are essential to improve the quality of our articles. Thank you once again for your generous and detailed comments. Please provide your insightful suggestions to address any inaccuracies or areas that need further improvement.

1. The English expression and style of the article has improved somewhat, but still needs a bit more work and proof reading to make it more academic and readable.

For example

p.4, line 40 – 'disastrous' is very unacademic in this context.

a bit of jumping between past and present tense (e.g. p.11 line 12 vs 27).

p.19 line 17 – 'indispensable' – suggest use 'essential'

p.20 line 10 – 'staffs' – no s

p.22 lines 4 – 17 – do not capitalise key themes

Response: Thank you for pointing out our grammar problems in such detail and giving careful advice. The grammar problem you raised has been corrected in the corresponding part of the article.

p.6. line 38 – 'independent and quiet clinic' – seems an unusual expression. can the authors explain what this means? Is it so that the interviews could be conducted in privacy?

Response: Thank you very much for your valuable comments. This means that the interviews were conducted in an independent and private place. We have revised our expression to independent and quiet room. (page6, line 21)

p.6. line 46 – 'conducted in the Chinese' – suggest deleting 'the'. Would it be helpful to add the type of Chinese, e.g. Mandarin, Cantonese etc if applicable

Response: Thank you for your constructive comments. Interviews were facilitated in in Mandarin Chinese. (page7, line 3)

Some quite unusual use of terms that needs to be better translated or aligned with English academic literature in this field.

Response: Thank you for your constructive comments. We have checked the translation of those very unusual terms to make it consistent with the English academic literature in the field.

p.13 line 55 – 'sense of motivation' – do the authors mean 'perception'?

Response: Thank you very much for your detailed advice. It means 'perception'. I'm very sorry for our poor expression. We have deleted the error expression. Thank you again for your detailed comments.

p.14 line 46 – 'Automatic Motivation' – another unusual term. Can the authors explain what this refers to. The analysis seems to suggest something like 'patient agency' but it is yet unclear.

Response: Thank you for your constructive comments. Motivation refers to the brain processes that energize and direct behaviour. With regard to motivation, we distinguished between reflective processes (involving evaluations and plans) and automatic processes (involving emotions and impulses that arise from associative learning and/or innate dispositions) .We have added a definition of motivation under the theme of Motivation. (page13, line 17)

p.18, line 4 – 'Opportunity factors' – are the authors referring to 'facilitators' or 'drivers' of behavioural change or something like that?

Response: Thank you very much for your valuable comments. Opportunity refers to external factors that enable or prompt the behaviour, including physical opportunity (time, resources,

etc.) and social opportunity (perceptions, interpersonal influence, etc.). Opportunity factors can be facilitators or barriers. We have added a definition of opportunity under the theme of Opportunity. (page11, line 18)

Can the authors engage with some of the patient behaviour, patient motivation and health promotion literature to find a more common terms and to develop their analysis? I am suggesting here that both use of term and engagement with the literature is needed.

Response: Thank you for your constructive comments. We have added definitions of capability, opportunity and motivation under the corresponding topics in the Results section, and analyzed the results using more common terms to ensure academic and accuracy.

2.what exactly is the clinical significance of the different types? Are they managed differently? Do they have different symptoms and health promotion needs? The introduction seems to suggest so, but a bit more explanation is needed.

Response: Thank you very much for your valuable comments. The causes of the two are the same, but type A aortic dissection is more dangerous and has higher mortality rate than type B. Type A aortic dissection requires surgical treatment, while some type B aortic dissection can choose conservative treatment without surgery. There are few studies on the health needs of patients with aortic dissection, and most of the existing studies include patients with type A and type b. At the beginning of this article, we wanted to describe the status of health promotion behaviour in these two groups separately, but there is little literature to support, so we can only describe the health promotion needs of patients with aortic dissection more generally. (page4, line 9-16) If these revisions be considered unsuitable, please kindly provide further guidance.

3.Results - Suggest reporting patient gender and age, as well as their 'number' after illustrative quotes. Since they are de-identified to protect their privacy and confidentiality, authors could mention this in the methods section.

Response: Thank you for your constructive comments. We have reported patient gender, age, and their number after illustrative quotes (page10-16), and mention in the methods section that patient information is de-identified to protect privacy and confidentiality. (page6, line 13)

4.While the study is very interesting, the analysis and significance of the findings is modest. More engagement with the literature in this field would greatly improve the depth and significance of the analysis.

Response: Thank you very much for your valuable comments. We have taken your constructive suggestion into careful consideration and revised the Discussion section accordingly. We include more previous literature on the area of health promoting behavior and compare our findings with it, and propose some interventions to increase the depth of the discussion. If there are still shortcomings in this modification, please kindly give us your valuable comments again. (page15, line 20)

VERSION 3 - REVIEW

Reviewer	**3**
Name	**Shih, Patti**
Affiliation	**University of Wollongong, School of Health & Society**
Date	**30-Oct-2024**
COI	

The manuscript has improved significantly since my last review a year ago. However, as I have reiterated in my previous reviews, while the study is interesting, and may potentially contribute to the services and care for the relevant patient cohort in China, the theoretical application of COM-B and the overall study significance is modest and not particularly innovative.

Overall the clarity of the study methods and findings has improved. However, I am still seeing many typos and editing errors. The use of both British and American spelling makes the language inconsistent. The layout of quotes needs to be type set correctly. All of these presentation issues need to be thoroughly fixed before the manuscript can be published. Another proof-read for appropriate use of expressions would be helpful.

The discussion is a lot stronger. I recommend removing the sub-headings based on the categories of COM-B, which currently makes the discussion a little clunky. Instead, just refer to these components in the text.