

## 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

<b>TITLE (PROVISIONAL)</b>	Knowledge of symptoms, time to presentation and barriers to medical help-seeking among Omani women diagnosed with breast cancer - A cross-sectional study
<b>AUTHORS</b>	Al-Azri, Mohammed; Al-Baimani, Khalid; Al-Awaisi, Huda; Al-Mandhari, Zahid; Al-Khamayasi, Jasem; Al-Lawati, Yaseen; Panchatcharam, Sathiya Murthi

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Katriina Whitaker University of Surrey, UK
<b>REVIEW RETURNED</b>	08-Sep-2020

<b>GENERAL COMMENTS</b>	<p>Thank for the opportunity to review this manuscript, which I read with interest. Overall, it is well written, and uses validated measures to understand knowledge of symptoms, time to presentation and barriers to medical help-seeking among Omani women diagnosed with breast cancer. I have some comments for the authors for consideration:</p> <ul style="list-style-type: none"><li>-In the abstract the Stage II, III and IV cancers are combined but would be important to know what % were defined as late stage (i.e. III&amp;IV) as this is one of the key points raised later on</li><li>-The sampling approach seems a bit unusual to me in that “all” women with breast cancer were approached but not sure this can be entirely accurate unless all women in Oman are diagnosed in the two centres included in the study. I think more detail about the sampling would help with transparency. The response rate also seems unusually high (over 90%)- how was this achieved?</li><li>-More detail relating to questionnaire development would also be welcome- for example, how were measures adapted to ask women with breast cancer about their experiences (as the measures used were developed in community samples and mainly ask people without cancer their anticipated help-seeking/ knowledge and so on).</li><li>-I’m not sure what fatigability is? Think probably fatigue is the right term?</li><li>-The time to help-seeking data feels a bit lacking in terms of the narrative on p 9 (i.e. under “time taken to seek medical help”). I wonder if this needs to mirror table 3 more accurately and use the same terms etc so it is clear what intervals you are referring to. Also need to make sure there isn’t a confusion between women deciding it was time to consult/ make an appointment and difficulties making an appointment (e.g. on p8) as these are very different drivers of potential delay.</li><li>-The analyses are mainly descriptive although one paragraph in the results focuses on socio-demographic correlates of knowledge.</li></ul>
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	<p>Did you attempt to look at equivalent correlates of help-seeking? This seems like a missed opportunity if not.</p> <p>- One of the findings is that “their initial response upon first noticing possible BC symptoms was to inform their husbands and family members.” How do you know this preceded/ precluded help-seeking? This is where some detail on the questionnaire items would be valuable as suggested above.</p> <p>-On p12 challenges in objectively measuring help-seeking are raised with Andersen et al cited. I wonder if this could be expanded upon and also need to cite more recent literature (e.g. Walter et al, Scott et al who developed the model of pathways to treatment and expanded on this work). For example, see: <a href="https://pubmed.ncbi.nlm.nih.gov/22536840/">https://pubmed.ncbi.nlm.nih.gov/22536840/</a></p>
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<b>REVIEWER</b>	Deanna J. Attai, MD David Geffen School of Medicine at UCLA
<b>REVIEW RETURNED</b>	04-Oct-2020

<b>GENERAL COMMENTS</b>	<p>This paper was well-written and easy to follow, and provides important information about knowledge of breast cancer symptoms and barriers to seeking medical help among women diagnosed with breast cancer in Oman. I have some minor comments which require clarification:</p> <p>1.) In the results, pages 7-8, Associations Between Sociodemographic Characteristics and Responses: there were 2 unexpected findings. One was that women with a high school (versus college) education were more likely to understand that a lump or fatigue could be breast cancer symptoms, and the other was that lower income (versus higher) women were more likely to understand that pain and redness could be associated with breast cancer. Do the authors have any ideas why these results seem counterintuitive?</p> <p>2.) Results, page 8, Time Taken to Seek Medical Help, lines 29-33 - Regarding the statement "more than half of them (65%) were able to get an appointment to see a doctor within 2 weeks" - it is not clear if this is 65% of the entire cohort, or 65% of those who waited more than 2 weeks to consult a doctor after noting symptoms. This should be made more clear.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1  
Reviewer Name  
Katriina Whitaker  
Institution and Country  
University of Surrey, UK

Thank for the opportunity to review this manuscript, which I read with interest. Overall, it is well written, and uses validated measures to understand knowledge of symptoms, time to presentation and barriers to medical help-seeking among Omani women diagnosed with breast cancer. I have some comments for the authors for consideration.

Authors’ responses: We would like to thank the reviewer for this comment.

-In the abstract the Stage II, III and IV cancers are combined but would be important to know what % were defined as late stage (i.e. III&IV) as this is one of the key points raised later on.

Authors’ responses: Thank you for this comment. This has now been changed in the abstract so that

only the percentage of late stage cases (i.e. stages III and IV) are presented.

-The sampling approach seems a bit unusual to me in that “all” women with breast cancer were approached but not sure this can be entirely accurate unless all women in Oman are diagnosed in the two centres included in the study. I think more detail about the sampling would help with transparency. The response rate also seems unusually high (over 90%)- how was this achieved?  
Authors’ responses: We would like to thank the reviewer for this important comment. We agree with the reviewer and the word “all” has now been omitted. However, we have mentioned in the study that the majority of women who are diagnosed with breast cancer anywhere in Oman are referred for treatment to the two centers included in the study. More details are provided to further explain the methods of data collection and the high response rate (over 90%).

-More detail relating to questionnaire development would also be welcome- for example, how were measures adapted to ask women with breast cancer about their experiences (as the measures used were developed in community samples and mainly ask people without cancer their anticipated help-seeking/ knowledge and so on).  
Authors’ responses: Thank you for this important comment. We agree with the reviewer regarding the point that the Breast-CAM was intended to be delivered to a community sample rather than patients who have been diagnosed with breast cancer. This has been mentioned as one of the study’s limitations. More details regarding the development and contents of both the Breast-CAM and ICBP have now been added to the manuscript.

-I’m not sure what fatigability is? Think probably fatigue is the right term?  
Authors’ responses: Thank you for pointing this out. The word has now been amended throughout the manuscript.

-The time to help-seeking data feels a bit lacking in terms of the narrative on p 9 (i.e. under “time taken to seek medical help”). I wonder if this needs to mirror table 3 more accurately and use the same terms etc so it is clear what intervals you are referring to. Also need to make sure there isn’t a confusion between women deciding it was time to consult/ make an appointment and difficulties making an appointment (e.g. on p8) as these are very different drivers of potential delay.  
Authors’ responses: Thank you for this comment. We have now organised Table 3 to better mirror the text in the manuscript and used the same terms and order when presenting the results as in the table. We have also modified the sentences in the text so that the differences between the decision to see the doctor and difficulties making the appointment to see the doctor are more clear.

-The analyses are mainly descriptive although one paragraph in the results focuses on socio-demographic correlates of knowledge. Did you attempt to look at equivalent correlates of help-seeking? This seems like a missed opportunity if not.  
Authors’ responses: We would like to thank the reviewer for this important comment. Yes, we have conducted correlation analyses; however, we did not find any significant findings.

- One of the findings is that “their initial response upon first noticing possible BC symptoms was to inform their husbands and family members.” How do you know this preceded/ precluded help-seeking? This is where some detail on the questionnaire items would be valuable as suggested above.  
Authors’ responses: We agree that we do not know whether this is part of help-seeking behavior or not. However, this is what women reported in their initial response to the question included in the ICBP. We have now added more detail about the contents of the Breast-CAM and ICBP (please see our previous responses).

-On p12 challenges in objectively measuring help-seeking are raised with Andersen et al cited. I

wonder if this could be expanded upon and also need to cite more recent literature (e.g. Walter et al, Scott et al who developed the model of pathways to treatment and expanded on this work). For example, see: <https://pubmed.ncbi.nlm.nih.gov/22536840/>

Authors' responses: Thank you for this comment. We have now expanded the discussion and included the 'Model of Pathways to Treatment'. We have also added other relevant literature that discusses factors which influence patients' help-seeking behaviours in response to cancer symptoms.

Reviewer: 2

Reviewer Name

Deanna J. Attai, MD

Institution and Country

David Geffen School of Medicine at UCLA

Please state any competing interests or state 'None declared':

None

Comments to the Author

This paper was well-written and easy to follow, and provides important information about knowledge of breast cancer symptoms and barriers to seeking medical help among women diagnosed with breast cancer in Oman. I have some minor comments which require clarification.

Authors' responses: We would like to thank the reviewer for this comment.

1.) In the results, pages 7-8, Associations Between Sociodemographic Characteristics and Responses: there were 2 unexpected findings. One was that women with a high school (versus college) education were more likely to understand that a lump or fatigue could be breast cancer symptoms, and the other was that lower income (versus higher) women were more likely to understand that pain and redness could be associated with breast cancer. Do the authors have any ideas why these results seem counterintuitive?

Authors' responses: We agree with the reviewer that these were unexpected findings; unfortunately, we do not have an adequate explanation. However, in the study, the illiterate women were overall less likely than literate women to recognise certain breast cancer symptoms, such as changes in the position of the nipple, pain in the breast or armpit and unexplained weight loss; this supports previous findings.

2.) Results, page 8, Time Taken to Seek Medical Help, lines 29-33 - Regarding the statement "more than half of them (65%) were able to get an appointment to see a doctor within 2 weeks" - it is not clear if this is 65% of the entire cohort, or 65% of those who waited more than 2 weeks to consult a doctor after noting symptoms. This should be made more clear.

Authors' responses: Thank you for this comment. We have now clarified the number and percentage of women who were able to get an appointment to see the doctors in the same or next day (17.7%) from the total number of respondents to the question (i.e. the entire cohort). This has been added in the Results section.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Katriina Whitaker University of Surrey, UK
<b>REVIEW RETURNED</b>	18-Nov-2020

<b>GENERAL COMMENTS</b>	<p>Thank you to the authors for careful consideration of the reviews and taking the comments on board. Overall this has been done well. I have some comments on the revision below:</p> <ul style="list-style-type: none"> <li>-In Background -p34, line 28 the sentence “Delays in cancer diagnosis are defined as time interval between the first symptom and the start of treatment”. This isn’t exactly accurate and perhaps could be rephrased as along the lines of..”delays in cancer diagnosis can occur at any time between the first symptom being noticed and the start of treatment.” I think it would then make sense to reference the Model of Pathways to Treatment paper here too as it will set the tone for the paper and make reference to this model in the discussion more seamless.</li> <li>-Please could you double check reference for ICBP measure as don’t think it was Department of Health (UK) alone who developed this measure (p 36, Line34)</li> <li>-p39 Several women reported XX (using traditional or herbal remedies-0.7%) this low % doesn’t seem to qualify as “several”?</li> <li>-Did you ask women about their presenting symptom (rather than just knowledge of breast symptoms)? If not, I would add this as a limitation to the discussion in terms of understanding how knowledge influenced help-seeking.</li> <li>-I may have missed this but where is the discussion of the opposite finding in terms of the association between education and symptom awareness raised by R2? (i.e. Point 1- I can see they’ve provided an answer in the reviewer response but think this needs to be mirrored in the manuscript).</li> <li>-In terms of my previous review I asked whether there had been some exploration of associations between socio-demographics and help-seeking and the authors replied with: “ We would like to thank the reviewer for this important comment. Yes, we have conducted correlation analyses; however, we did not find any significant findings.” I also can’t see this response reflected anywhere in the revised manuscript.</li> <li>- p 41, The sentence: “this trend often causes delays in diagnosis, with many patients returning home with additional complications.[15]” seems quite strong based on a small qualitative study. Would perhaps rephrase, e.g. “This trend can cause delays..”</li> <li>-Minor typo on p41 line 59 “such as being scared, embarrassed..”</li> <li>-I welcome the additional discussion of the Model of Pathways to Treatment on p 42. but as mentioned above think this should also come into the introduction and be used for definitions/ up to date terminology.</li> <li>-Conclusion- p 43. Line 26) is it true to say the majority of cancers were diagnosed at later stages?</li> </ul>
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<b>REVIEWER</b>	Deanna J. Attai MD David Geffen School of Medicine at UCLA Los Angeles, California, US
<b>REVIEW RETURNED</b>	15-Nov-2020

<b>GENERAL COMMENTS</b>	The authors have satisfactorily responded to all reviewer queries.
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**VERSION 2 – AUTHOR RESPONSE**

Reviewer: 2  
Reviewer Name: Deanna J. Attai MD

Reviewer: 1

Reviewer Name: Katriina Whitaker

Reviewer: 2

Institution and Country: David Geffen School of Medicine at UCLA  
Los Angeles, California, US

Reviewer: 1

Institution and Country: University of Surrey, UK

Reviewer: 2

Comments to the Author

The authors have satisfactorily responded to all reviewer queries.

Authors' response: Thank you for this comment.

Reviewer: 1

Comments to the Author

Thank you to the authors for careful consideration of the reviews and taking the comments on board.

Overall this has been done well. I have some comments on the revision below:

-In Background -p34, line 28 the sentence "Delays in cancer diagnosis are defined as time interval between the first symptom and the start of treatment". This isn't exactly accurate and perhaps could be rephrased as along the lines of.."delays in cancer diagnosis can occur at any time between the first symptom being noticed and the start of treatment." I think it would then make sense to reference the Model of Pathways to Treatment paper here too as it will set the tone for the paper and make reference to this model in the discussion more seamless.

Authors' response: Thank you for this comment. This has now been amended as advised (page 4, lines 15 to 16).

-Please could you double check reference for ICBP measure as don't think it was Department of Health (UK) alone who developed this measure (p 36, Line34)

Authors' response: We thank the reviewer for this comment. This has now been corrected (page 6, lines 29 to 33).

-p39 Several women reported XX (using traditional or herbal remedies-0.7%) this low % doesn't seem to qualify as "several"?

Authors' response: Thank you for this comment. This has been changed to "few women" (page 9, lines 21 to 22).

-Did you ask women about their presenting symptom (rather than just knowledge of breast symptoms)? If not, I would add this as a limitation to the discussion in terms of understanding how knowledge influenced help-seeking.

Authors' response: Thank you for this comment. We have now added this as one of the study's limitations (page 13, lines 27 to 30).

-I may have missed this but where is the discussion of the opposite finding in terms of the association between education and symptom awareness raised by R2? (i.e. Point 1- I can see they've provided an answer in the reviewer response but think this needs to be mirrored in the manuscript).

Authors' response: Thank you for pointing out this omission. This has now been added in the Discussion section. We have stressed the need for further investigation into this finding (page 11, line

8 to 17).

-In terms of my previous review I asked whether there had been some exploration of associations between socio-demographics and help-seeking and the authors replied with: " We would like to thank the reviewer for this important comment. Yes, we have conducted correlation analyses; however, we did not find any significant findings." I also can't see this response reflected anywhere in the revised manuscript.

Authors' response: Thank you for pointing this out. We have now added this in the Results section (page 10, lines 1 to 3).

- p 41, The sentence: "this trend often causes delays in diagnosis, with many patients returning home with additional complications.[15]" seems quite strong based on a small qualitative study. Would perhaps rephrase, e.g. "This trend can cause delays.."

Authors' response: Thank you for this comment. This has now been changed accordingly (page 11, line 30).

-Minor typo on p41 line 59 "such as being scared, embarrassed.."

Authors' response: Thank you for pointing out this error. This has now been corrected (page 12, line 24).

-I welcome the additional discussion of the Model of Pathways to Treatment on p 42. but as mentioned above think this should also come into the introduction and be used for definitions/ up to date terminology.

Authors' response: Thank you for this comment. The sentence which defines/explains the model has now been moved from the Discussion to the Introduction section with further explanation (page 4, lines 23 to 33).

-Conclusion- p 43. Line 26) is it true to say the majority of cancers were diagnosed at later stages?

Authors' response: Thank you for pointing out this error. This has now been corrected (page 14, line 6).