Author's response to reviews

Title: The use of rehabilitation among patients with breast cancer: A retrospective longitudinal cohort study

Authors:

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Author's response to reviews: see over
Dear Dr Pafitis,

Thank you for your comments and suggestions for our manuscript (MS: 7184464376592345) entitled, “The use of rehabilitation among patients with breast cancer: A retrospective longitudinal cohort study” by Lin et al. According to the reviewers’ comments, we have revised our manuscript.

Please find attached our tabulated point-to-point responses to the reviewers’ comments. We hope that you will be satisfied with our responses and that the revised version is acceptable for publication in *BMC Health Services Research*.

We look forward to hearing from you at your earliest convenience.

Yours sincerely,

Po-Jung Pan MD, MS
Department of Physical Medicine & Rehabilitation
National Yang-Ming University Hospital
I-Lan, Taiwan
We thank the reviewers for their suggestions and comments. In accordance with these, we have revised our manuscript (MS: 7184464376592345). The changes are indicated in red font in the revised manuscript.

Reviewer #1

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tr>
<td>1) Please clarify the process that was used for peer review/scientific review of this study.</td>
<td>Though the patient identity and institution data in the NHIRD were cryptographically scrambled by NHI before being made available to researchers, the study was also approved by The Institutional Review Board of National Yang-Ming University Hospital. (Page 5, lines 9-10)</td>
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<td>2) The first sentence of the conclusion in the abstract is grammatically poor and requires revision</td>
<td>The manuscript has been corrected by a native-English speaker with scientific expertise from Edanz Editing. The first sentence of the conclusion in the Abstract has been rewritten as: “Only a small proportion of patients with breast cancer received rehabilitation therapy in the first five years after diagnosis.” (Page 3, lines 1-2)</td>
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<td>3) Page 2: line 17: I disagree with the suggestion that the concept of cancer rehabilitation is new; it has been around for a very long time but is gaining increasing recognition, mostly due to the 'survivorship agenda'. Refer to some of the papers by Gilchrist, particularly A framework for assessment in oncology rehabilitation (2009). Physical Therapy 89(3): 286-306.</td>
<td>In accordance with your suggestion, we have rewritten the statement as follows: “The concept of cancer rehabilitation is not new; however, it is gaining increasing recognition.” (Page 3, lines 13-14) In addition, we cited a paper by Gilchrist (A framework for assessment in oncology rehabilitation [2009]), as suggested. (Page 3, line 14)</td>
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<td>4) Page 2: line 19 to avoid ambiguity, change 'therapies' to 'medical treatment'</td>
<td>In the revised manuscript, “therapies” has been changed to “medical treatment.” (Page 3, line 15)</td>
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<td>5) Page 2: line 20: lymphedema is one word</td>
<td>We have changed “lymph edema” to “lymphedema” throughout the revised manuscript.</td>
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<td>6) Page 2: line 24: physical activity and exercise is very topical currently and has been shown to both improve QOL and functioning but also appears to have a survival benefit, I feel referencing this literature will give weight to your introduction. See Holmes et al (2009) physical activity and survival after breast cancer diagnosis. JAMA 293(20): 2479-2486.</td>
<td>The article by Holmes et al. in JAMA has been added as a reference. (Page 3, line 21) We have added the survival benefit in the revised manuscript: “Several studies have shown that rehabilitation can alleviate post-treatment side effects, maintain quality of life, and improve the survival.” (Page 3, line 21)</td>
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<td>7) Page 4: lines 10-11: in most countries, nutrition and dietetics is included as rehabilitation, please clarify if this is provided as a rehabilitation service in Taiwan</td>
<td>In Taiwan, nutrition and dietetic services are neither managed by the Department of Physical Medicine &amp; Rehabilitation nor covered by National Health Insurance. Patients can obtain nutritional information from consultations during admission or via out-patient services. Some hospitals provide free nutrition and dietetic consultations. Some qualified hospitals implementing projects from the Bureau of Health Promotion, Department of Health, provide nutritional services for cancer patients. (Page 4, lines 6-7)</td>
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<td>8) Page 6: lines 9-10: clarify whether the figures you quote for prevalence of arm/shoulder pain relate to the articles you reference or your study. It is currently not clear</td>
<td>To clarify that the figures relate to the referenced articles, the sentence has been changed as follows: “Previous studies have found that at 5-year follow-up, shoulder or arm pain occurred in 30% to 40% of patients, restricted shoulder mobility occurred in 15% to 30%, and lymphedema occurred in 10% to 40%, depending on the method of assessment</td>
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9) Page 6: lines 12-14: it is not clear what 'related complication rate' is. To make our meaning clear, we have changed “related complication rate” to “the rate of complications after breast cancer treatment.” (Page 8, line 18)

10) Page 6: line 15: I think the reference to article 16 should go after 'countries' on line 15 We have changed the placement of reference [16] (now [20]) in accordance with the reviewer’s suggestion. (Page 8, line 19)

11) Page 6: lines 18-21: there needs to be explanation of why EARLY Intervention with rehabilitation is important and an emphasis that many of the barriers that are quoted e.g. fatigue, psychosocial issues, are perfect reasons to refer to rehabilitation services. For rephrasing the importance of early intervention with rehabilitation, we have discussed lymphoma as an example in the revised manuscript: “In the early stage of lymphedema, the first symptoms are subjective sensations of tightness or palpable tightness in the subcutaneous depth of the affected arm. These symptoms may be reversed by means of conservative treatments including compression bandaging, wearing a sleeve, lymphatic drainage massage, and pneumatic pumping. Without treatment, edema volume will increase, pain will exacerbate, and the fat tissue may eventually develop fibrosis. This is considered chronic lymphedema, and is often irreversible.” (Page 9, line 23 to Page 10, line 6)
We have added the following sentence: “Many of these barriers represent perfect indications for referral to rehabilitation services.” (Page 9, lines 9-10)

12) Page 6: line 25-26: can you provide a reference A reference for an article by Binkley et al. has been added. (Page 9, line 15)

13) Page 6: lines 27-28: not sure what you mean by 'mutual aid groups' The ‘mutual aid group’ (mutual support and self-help group) in Taiwan is mainly
| Page 7: lines 6-7: clarify when the 'golden time' is and why | The following explanation has been added to the revised manuscript: “In the early stage of lymphedema, the first symptoms are subjective sensations of tightness or palpable tightness in the subcutaneous depth of the affected arm. These symptoms may be reversed by means of conservative treatments including compression bandaging, wearing a sleeve, lymphatic drainage massage, and pneumatic pumping. Without treatment, edema volume will increase, pain will exacerbate, and the fat tissue may eventually develop fibrosis. This is considered chronic lymphedema, and is often ineffectively treated. According to the results of this study, patients delayed their use of rehabilitation services. Therefore, more emphasis should be placed on the golden intervention time, arm lymphedema diagnosed within 12 months after operation, for rehabilitation visits. |

| Page 8: conclusion needs a rewrite as the grammar is poor | The conclusion has been extensively rewritten. (Page 11, lines 2-6) |

| For an overview of UK evidence based rehabilitation pathways which you may want to refer to and reference in your introduction see: www.ncat.nhs.uk | In accordance with your comment, we reviewed and referenced the suggested source. (Page 3, line 15) |
and go to 'living with and beyond cancer' and then 'cancer rehabilitation'  

17) Another useful reference showing importance of early physiotherapy to prevent lymphedema is: Lacomba et al. 2010 in the BMJ  

Thank you for this information. We have reviewed and referenced the suggested source. (Page 10, line 5)  

Reviewer #2  

Methods Section:  
- Under patient demographics you speak to 2 different groups; rehabilitation users and non-users. You should note earlier in the manuscript, perhaps in the study samples paragraph, that there were 2 groups. The overall 632 patients who were registered were divided into 2 subgroups; those who used rehabilitation and those who did not.  

We have made this distinction clear by adding the following sentence to the revised manuscript, in the study samples paragraph: “Patients in the cohort were divided into two subgroups; those who had used rehabilitation services and those who had not.” (Page 5, lines 15-17)  

Methods Section:  
- Page 4, line 29, it is unclear what the “insured unit” is referring to. Please specify what group you are referring to.  

In the National Health Insurance program, the “insured unit” refers to the identity or occupational category in which the insured person is enrolled. This information has been added to the manuscript. (Page 6, lines 18-19)  

Discussion Section:  
- Page 6, line 9: This paragraph reports on the demographic data of your patients and would be better suited in the results section and more concisely discussed here.  

This paragraph has been moved to the results section and made more concise. (Page 6, lines 12-19)  

Discussion Section:  
- Page 6, line 25: There is reference to inadequacy of information provided to patients. There are several references that could be used here, consider: Binkley et al.  

Thank you for this information. A reference to the article by Binkley et al. has been added to the manuscript. (Page 8, line 20)
Discussion Section:
- Page 7, line 5: consider referencing the new publication from the American Cancer Society on the need for early diagnosis of lymphedema:
  http://onlinelibrary.wiley.com/doi/10.1002/cncr.v118.8s/issuetoc and on early lymphedema detection:

In accordance with your suggestion, the article entitled, “Preoperative assessment enables the early diagnosis and successful treatment of lymphedema” has been cited in the revised manuscript. (Page10, line 5)