

## 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>	Prevalence, discomfort, and self-relief behaviors of painful diabetic neuropathy in Taiwan: A cross-sectional study
<b>AUTHORS</b>	Jane, Su-Whi; Lin, Ming-shyan; Chiu, Wen-Nan; Beaton, Randal; Chen, Mei-Yen

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Cary Reid Cornell Medical College New York, NY USA
<b>REVIEW RETURNED</b>	22-Apr-2016

<b>GENERAL COMMENTS</b>	<p>This manuscript documents the prevalence of and factors associated with painful diabetic neuropathy in a sample of Asian adults with type II diabetes. The manuscript is easy to read although there are several phrases that are not commonly used in English and should be revised. My chief concerns have to do with 1) what new knowledge is being generated here, 2) absence of criteria (perhaps they are there and I missed them) for your dependent variable PDN, and 3) the absence of methods describing how you constructed your logistic model. These are all fixable issues.</p> <p>Other issues Page 2, line 32. You cannot refer to something as a predictor in a cross-sectional study. Page 2, line 48. Since when is acupuncture a "risky self-managed behavior?" or using "hot water?" Page 5, line 25. Avoid use of the term 'risk factor' since you have no way of knowing whether a cause effect relationship is present given your cross-sectional data. Page 6, line 18. Why were individuals with low back pain excluded? Page 7, line 34. It would not be correct to state as you do: "Demographic characteristics..... were used to collect basic information....." Please revise. Page 9, line 18. What amount of missing data did you have? Page 9, Para 2. There are no methods (see above) for your logistic regression analyses. Page 9, para 2. The power calculations are not clear. you provide an effect size but don't tell the reader what association can be found at that effect size.</p> <p>The Discussion section can be shortened considerably. Again, I would focus this section on what new knowledge has been generated by your study.</p>
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<b>REVIEWER</b>	Jennifer Dickman Portz Colorado State University, USA
<b>REVIEW RETURNED</b>	01-Jun-2016

<b>GENERAL COMMENTS</b>	<p>Authors present an important topic. More research is needed about pDPN self-management.</p> <p>Here is a list of recommended modifications:  Abstract: Authors refer to “other countries” but this is out of context. This may make sense reading the full article, but should be revised in the abstract.  Page 4, line 6-7: citation is needed after first sentence.  Paragraph 1: Authors seem to contradict themselves by stating little is known about the prevalence, but then go on to give precise numbers. There is also a great deal of literature around the patient experience of pDPN. There may be little known about this topic among individuals in southeast Asia, but that should be clear here.  Page 4, Line 48: Literatures?  Page 5, line 56: 40-50 samples were selected? Please clarify.  Page 8, #5 measures: (MAJOR) The questions listed to measure self-management, do not measure self-management. They seem to ask about pain and symptoms, not strategies for managing the condition. The last questions touches on this, but I would argue this is a very weak measure for self-management.  Results: (MAJOR) It was not clear to me that this was a mixed-method design. Which is why some of the measures were confusing. Revise to clarify procedures for readers. For example, the author state 192 were invited to participate in an interview, but how many actually participated? All? How was the interview conducted? What types of qualitative analysis were performed to identify the “reported phenomena”  On this same point, if you are using an phenomenology approach, why do the authors quantify the results? I would argue the qualitative results would be stronger presented in a qualitative style rather than quantitative.  The phenomena described in the paper, i.e. painful symptoms and experiences is reported/well-documented in the literature. I am unsure if the particular discussion is new or adding to our understanding. My recommendation would be to focus on risk factors and management behaviors rather than the experience of pain.</p>
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<b>REVIEWER</b>	Hanan Khalil Monash University
<b>REVIEW RETURNED</b>	03-Jun-2016

<b>GENERAL COMMENTS</b>	<p>I congratulate the authors on undertaking a large study in understudied area. I have a few comments for them to consider;  The objectives of the study are not very well defined. The authors have mentioned a few aims unrelated aims in the study and have not focused on a particular finding. For example they mentioned prevalence, phenomenon of discomfort (which is not a new finding) and lastly a nurse led program which was only referred to briefly in the discussion.  The paper needs to be restructured in a way to present a cohesive argument and that each aim follows the other.</p>
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## VERSION 1 – AUTHOR RESPONSE

For reviewer 1:

1. Regarding several phrases that are not commonly used in English and should be revised.

Ans. Thank you. We have reedited the entire manuscript by a native English speaker.

2. Regarding the three chief concerns with 1) what new knowledge is being generated here, 2) absence of criteria (perhaps they are there and I missed them) for your dependent variable PDN, and 3) the absence of methods describing how you constructed your logistic model.

Ans. We have reedited the three chief concerns on p4, p8, p9, p12, p15 with red font.

3. Regarding on p2 with...cannot refer to something as a predictor in a cross-sectional study and using risky self-managed behavior...

Ans. We have reedited on p2 with red font.

4. Regarding on p5 avoid use of the term 'risk factor' ...

Ans. We have reedited on p5 with red font.

5. Regarding on p6...Why were individuals with low back pain excluded?

Ans. Considering the low back pain induced by the musculoskeletal issues, such as lumbar herniated intervertebral disc disease. We have reedited the concern on p6 with red font.

6. Regarding on p7... It would not be correct to state as you do: "Demographic characteristics..... were used to collect basic information..."

Ans. We have reedited this part on p7 with red font.

7. Regarding on p9...What amount of missing data did you have?

Ans. We have reedited and provided information of missing data on p9-10 and table 1 with red font.

8. There are no methods for your logistic regression analyses.

Ans. We have reedited and provided more information on p9 with red font.

9. Regarding the power calculations are not clear... what association can be found at that effect size.

Ans. Sorry about the confused description in the power calculations. We have reedited on p9 with red font.

10. Regarding ...the discussion section can be shortened considerably.

Ans. We have reedited the discussion section on p14-17 with red font.

For reviewer 2:

1. Regarding in the abstract: Authors refer to "other countries" but this is out of context. This may make sense reading the full article, but should be revised in the abstract.

Ans. We have reedited the abstract on p2 with red font. Thank you.

2. Regarding on p4, citation is needed after first sentence.

Ans. We have reedited the citation on p4 with red font.

3. ...Authors seem to contradict themselves by stating little is known about the prevalence, but then go on to give precise numbers. There is also a great deal of literature around the patient experience of pDPN. There may be little known about this topic among individuals in southeast Asia...

Ans. We have reedited this section on p4 with red font.

4. Regarding on p4, Literatures?

Ans. We have reedited this section on p4 with red font.

5. Regarding on p5, 40-50 samples were selected? Please clarify.

Ans. We have re-edited this section on p5 with red font.

6. Regarding on p8, #5 measures: The questions listed to measure self-management, do not measure self-management. They seem to ask about pain and symptoms, not strategies for managing the condition.

Ans. We have re-edited the describing questions to measure self-relief behaviors on p8 with red font.

7. Regarding on the results: It was not clear to me that this was a mixed-method design. Which is why some of the measures were confusing. Revise to clarify procedures for readers. For example, the author state 192 were invited to participate in an interview, but how many actually participated? All? What types of qualitative analysis...

Ans. Sorry about the confused description in the manuscript. We have re-edited the section on p9-10 and whole manuscript with red font. For avoiding the confusion, we did not use the term of a mixed-

method design in the manuscript instead of description study.

8. The phenomena described in the paper, i.e. painful symptoms and experiences is reported/well-documented in the literature. I am unsure if the particular discussion is new or adding to our understanding. My recommendation would be to focus on risk factors and management behaviors rather than the experience of pain.

Ans. We have re-edited the section on p9-10 and whole manuscript with red font.

For reviewer 3:

1. Regarding the ...objectives of the study are not very well defined...

Ans. We have re-edited the objectives of the study on p2 with red font. We also provided more information related to the nurse led health promotion program in the abstract, method, and discussion sections with red font. Thank you.

2. Regarding the paper needs to be restructured in a way to present a cohesive argument...

Ans. We have re-edited and restructured the manuscript with red font.

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Cary Reid Weill Cornell Medicine USA
<b>REVIEW RETURNED</b>	31-Jul-2016

<b>GENERAL COMMENTS</b>	<p>This is a well written manuscript that describes the prevalence of and factors associated with painful diabetic neuropathy in a sample of older Taiwanese adults with diabetes mellitus. The authors report a prevalence rate of 30% in the sample and identify several factors associated with PDN. I agree with the authors that little information is currently available regarding PDN in Taiwan. My chief concerns with the work have to do with:</p> <p>1) Sample assembly. It appears that the research nurses started with random samples of patients with diabetes in their files. To be eligible prospective subjects had to report pain or numbness in the lower limbs, thus enriching the sample in those with either diabetic peripheral neuropathy and PDN. In the absence of diabetic participants without pain or numbness in the lower extremities it is hard to know what to make of the prevalence rate in the sample and factors associated with PDN.</p> <p>2) Concerns about the criterion used to identify those with PDN. I understand that diagnostic criteria vary for PDN, but simply relying on a report of any pain in the feet would seem very nonspecific. Gout, pseudo gout, OA and various other foot problems (bunions, corns) produce pain, so there is substantial likelihood of misclassification of subjects in the group classified as having PDN.</p> <p>Other issues:</p> <p>1) It would be helpful to report all findings (both positive and negative) with respect to factors associated with your primary outcome (Table 2). Many other investigators have identified duration of diabetes as a risk factor along with smoking, alcohol consumption and height.</p> <p>Did you gather data regarding amount of tobacco exposure? Treating this variable as none or former and current is likely suboptimal. As the authors know many former smokers have years of tobacco exposure that may be greater than subjects in the current group.</p>
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	<p>2) more information should be provided around the development of the logistic regression model. What criteria were used to decide which variables to include in the final model? Were any regression diagnostics employed to evaluate the final model? What other confounders were controlled for besides education and age?</p> <p>3) All 192 participants with PDN were invited to participate in focus group interviews. How many accepted?</p>
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### VERSION 2 – AUTHOR RESPONSE

For reviewer 1:

Thank you for your support on this manuscript.

1. Regarding the sample assembly... It is hard to know what to make of the prevalence rate in the sample and factors associated with PDN...

Ans. Thank you for this comment. In our present study, PDN was identified by the research team, 2 physicians' screening and through a subjective question. Yes, it might underestimate in the absence of diabetic participants without pain in the lower extremities. Therefore it is hard to know what to make of the prevalence rate in the sample and factors associated with PDN. We have reedited these concerns in the exclusion criteria on p6 and limitation on p17.

2. Regarding about the criterion used to identify those with PDN... Gout, pseudo gout, OA and other foot problems produce pain...misclassification of subjects...

Ans. Yeah, but considering the feasibility in the rural community and the major purpose of nurse-led longitudinal health promotion program is focused on the diabetic foot ulceration prevention via early detection of the painful neuropathy. We have reedited these concerns in the exclusion criteria on p6 and limitation on p17 with red font.

3. Regarding to report all findings with respect to factors associated with the primary outcome...Treating this variable as none or former and current is suboptimal...

Ans. Thank you for the comment. Unfortunately, we did not gather data regarding the amount of tobacco exposure. As mention in the measurement section on p8, participants were classified as "none or formerly" if they had never engaged in smoking. We have reedited the limitation on p17 with red font.

4. Regarding to provide more information with the development of the logistic regression model...

Ans. Thank you for the comment. We have provided more information about the logistic regression model on p9-10 with red font.

5. Regarding 192 participants with PDN were invited to participate in focus group interviews. How many accepted?

Ans. In the part 2 study, all of them were invited and participated in the focus group discussion with their agreement forms. After finishing all discussion, we gave them a foot care lotion for gift. We have reedited this information on p6 with red font.

### VERSION 3 – REVIEW

<b>REVIEWER</b>	Cary Reid Weill Cornell Medical College
<b>REVIEW RETURNED</b>	08-Sep-2016

<b>GENERAL COMMENTS</b>	<p>The authors have improved their manuscript based on the initial reviews. Issues that I strongly encourage them to attend to:</p> <p>1. Please have the manuscript carefully reviewed by an individual whose first language is English. There are phrases in the manuscript</p>
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	<p>(e.g., being a female gender) that even though correct, would never be used in English</p> <p>2. In my opinion the high prevalence rate of PDN is because you selected patients who were reporting lower extremity symptoms. Had you gone out and advertised for patients with diabetes to participate in the study, the prevalence rate would be far lower.</p>
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