## 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**

TITLE (PROVISIONAL)	Influencing factors of dysmenorrhea among hospital nurses: A questionnaire survey in Taiwan
AUTHORS	Chiu, Min-Hui; Hsieh, Hsiu-Fen; Yang, Yi-Hsin; Chen, Huei-Mein; Hsu, Su-Chen; Wang, Hsiu-Hung

## **VERSION 1 – REVIEW**

REVIEWER	Cho Lee Wong The Chinese University of Hong Kong
REVIEW RETURNED	01-Jun-2017

REVIEWER	Moamar Al-Jefout Department of Obstetrics & Gynecology. CM&HS UAEU. Al ain UAE
REVIEW RETURNED	19-Jun-2017

CENEDAL COMMENTS	This work is your important and I though the outborn for their work
GENERAL COMMENTS	This work is very important and I thank the authors for their work.
	However, I have few questions that need to be cleared before
	agreeing for the work to be published.
	These are my comments and recommendations:
	1- Revise the title.
	2- The abstract should contain more statistics and p values.
	3- The authors should revise the abstract language.
	4- Objectives should be revised as they are not fully clear.
	5- The authors should define what they mean by dysmenorrhea?
	6- The authors should identify women with secondary dysmenorrhea
	as this may be a confounding factor?
	7- Long and not focused introduction.
	8- Lines 27-33 are without reference.
	9- How randomization was done?
	10- Not clear what is the responding rate?
	11- Table 1 needs more elaboration.
	12- Regularity of periods was not defined.
	13- The discussion part should be revised to be more focused.

REVIEWER	WLP
	Malaysia
REVIEW RETURNED	31-Jul-2017

GENERAL COMMENTS	Abstract. Explain MAS results.In conclusion, instead of repeating significant factors found in result, describe in what manner the identified factors help managers in designing health-promoting menstrual care program for nurses.
	Introduction. Very extensive and well written
	Methodology. A participants were recruited from 2 institutions, describe the differences between these 2 institution and how it may influence the outcome of results. In data analysis, need to explain the model used in multiple regression analysis and the condition for including variables into the regression model.
	Results. In result section, little description about knowledge of dysmenorrheal, only presentation of total socre and SD. Authors need to describe each item and which emphasize on which item of the scale score highest and lowest to provide insights into which aspect of knowledge that need improvement for educational intervention. Like wise with the scales of menstrual attitudes. Table 3 needs description on the selection of factors to be investigated or included in the model and the rational of choosing these factors.
	Discussion and conclusion. Authors need to emphasize on the significant factors found in this study and discuss and provide recommendation based on the factors found.

## **VERSION 1 – AUTHOR RESPONSE**

Reviewer: 1

Revisions Proposed (section numbers refer to the revised 1 manuscript)

Editorial comments:

1. Please provide reference for the definition of dysmenorrhea and make it clearer to the reader that how to define a woman with dysmenorrhea (e.g. experienced at least once in the past six months?) (p.2 & p.6).

Revisions Made (page numbers refer to the revised manuscript)

1.We have defined dysmenorrhea as lower abdominal pain, which is brought on by menses in the previous 6 months. (p. 8)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

2. Please give 1-2 questions included in the DKS (p.7).

Revisions Made (page numbers refer to the revised manuscript)

2. As recommended, we have added two questions included in the DKS as follows: (p. 11) The scale included 20 questions with yes/no answers, for example, "Women with dysmenorrhea are at high risk for sterility", and "Applying hot compresses to the lower abdomen can ease menstrual cramps".

Revisions Proposed (section numbers refer to the revised 1 manuscript)

- 3. (1)Please provide examples of the modification made by Lee (1994) on MAS (e.g. delete the item or modify the wording?
- (2) The Cronbach's alpha coefficient for MAS was not acceptable (0.57), any reason for that? (p.7).

Revisions Made (page numbers refer to the revised manuscript)

- 3.(1) Lee translated this scale into a Chinese version and deleted two items, owing to cultural differences. However, these two items did not appear in any previous references.
- (2) Although, the Cronbach's alpha coefficient for MAS was 0.57, Lo and Lin (1998) suggested that an acceptable Cronbach's alpha coefficient was from 0.3 to 0.7.34 (p. 12)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

4. Please make it consistent for the presentation of p-value (0.154 instead of .154) in p.9.

Revisions Made (page numbers refer to the revised manuscript)

4. As recommended, we have revised all p-values for consistency in the manuscript.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

5. Please consider rewrite the discussion part to make it more precise and concise.

Revisions Made (page numbers refer to the revised manuscript)

5. We have rewritten the discussion to make it more precise and concise.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

6. Please consider to write it in more details about how the findings of this study can improve health-promoting self-care and friendly environments for nurses. You have mentioned to establish a supporting environment for nurses under 40 and unmarried, however, would it create a bias or stigma?

Revisions Made (page numbers refer to the revised manuscript)

6. We have revised the discussion and conclusion to emphasize on the significant factors found in this study.

(P. 19)

Reviewer: 2

Revisions Proposed (section numbers refer to the revised 1 manuscript)

Editorial comments:

1- Revise the title.

Revisions Made (page numbers refer to the revised manuscript)

- 1. As recommended, we have revised the title.
- "Influencing factors of dysmenorrhea among hospital nurses: A questionnaire survey in Taiwan"

Revisions Proposed (section numbers refer to the revised 1 manuscript)

2- The abstract should contain more statistics and p values.

Revisions Made (page numbers refer to the revised manuscript)

2. As recommended, we have revised the abstract and included the statistics and p-values.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

3- The authors should revise the abstract language.

Revisions Made (page numbers refer to the revised manuscript)

3. We have asked a professional native English-speaking editor to edit the manuscript, including the abstract (please see the attachment).

Revisions Proposed (section numbers refer to the revised 1 manuscript)

4- Objectives should be revised as they are not fully clear.

Revisions Made (page numbers refer to the revised manuscript)

4. We have revised the objectives in the abstract.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

5- The authors should define what they mean by dysmenorrhea?

Revisions Made (page numbers refer to the revised manuscript)

5. We have defined dysmenorrhea as lower abdominal pain, which is brought on by menses in the previous 6 months.11 (p. 8)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

6- The authors should identify women with secondary dysmenorrhea as this may be a confounding factor?

Revisions Made (page numbers refer to the revised manuscript)

6. We have added secondary dysmenorrhea as a confounding variable in Table 1. The statistics showed that there was no significant difference.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

7- Long and not focused introduction.

Revisions Made (page numbers refer to the revised manuscript)

7. We have shortened the introduction to make it more concise.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

8- Lines 27-33 are without reference.

Revisions Made (page numbers refer to the revised manuscript)

8. The sentences have been revised and the reference identified.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

9- How randomization was done?

Revisions Made (page numbers refer to the revised manuscript)

9. We have added more information about simple random sampling used in the study to recruit the estimated number of study participants.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

10- Not clear what is the responding rate?

Revisions Made (page numbers refer to the revised manuscript)

10. Among 450 nurses, finally, 420 valid questionnaires were returned, with a response rate of 93.3%. (p. 9)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

11- Table 1 needs more elaboration.

Revisions Made (page numbers refer to the revised manuscript)

11. We have added more information, to elaborate Table 1. (p. 13)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

12- Regularity of periods was not defined

Revisions Made (page numbers refer to the revised manuscript)

12. We have added the definition of regularity of periods in the Table 1 footnote.

"Note: Regularity of periods means that the duration between consecutive first-day menses is similar."

Revisions Proposed (section numbers refer to the revised 1 manuscript)

13- The discussion part should be revised to be more focused.

Revisions Made (page numbers refer to the revised manuscript)

13. We have revised the discussion to be more focused. (p. 19)

Reviewer: 3

Revisions Proposed (section numbers refer to the revised 1 manuscript)

Editorial comments:

1.Abstract. Explain MAS results. In conclusion, instead of repeating significant factors found in result, describe in what manner the identified factors help managers in designing health-promoting menstrual care program for nurses.

Revisions Made (page numbers refer to the revised manuscript)

1. We have revised as recommended.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

2. Introduction. Very extensive and well written

Revisions Made (page numbers refer to the revised manuscript)

2. Thank you for your comments.

Revisions Proposed (section numbers refer to the revised 1 manuscript)

- 3. Methodology.
- (1) A participants were recruited from 2 institutions, describe the differences between these 2 institution and how it may influence the outcome of results.
- (2) In data analysis, need to explain the model used in multiple regression analysis and the condition for including variables into the regression model.

Revisions Made (page numbers refer to the revised manuscript)

3.

- (1) We have revised as recommended. (p. 9)
- (2) We have added this explanation. (p. 12)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

- 4. Results.
- (1) In result section, little description about knowledge of dysmenorrheal, only presentation of total socre and SD. Authors need to describe each item and which emphasize on which item of the scale score highest and lowest to provide insights into which aspect of knowledge that need improvement for educational intervention. Like wise with the scales of menstrual attitudes.
- (2) Table 3 needs description on the selection of factors to be investigated or included in the model and the rational of choosing these factors.

Revisions Made (page numbers refer to the revised manuscript)

4.

- (1) We have added this description. (p. 16)
- (2) We have added this explanation in Table 3. (p. 16)

Revisions Proposed (section numbers refer to the revised 1 manuscript)

Discussion and conclusion. Authors need to emphasize on the significant factors found in this study and discuss and provide recommendation based on the factors found.

Revisions Made (page numbers refer to the revised manuscript)

We have revised the discussion and conclusion to emphasize the significant factors found in this study.