

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)	Latent profile analysis of nurses' perceived professional benefits in China: a cross-sectional study
AUTHORS	Sun, Changli; Jiang, Hu; Yao, Qingfang; Wang, Xianwei; Wen, Xueke; Liu, Hanmei

VERSION 1 – REVIEW

REVIEWER	Drott, Jenny Linköping University
REVIEW RETURNED	13-Aug-2023

GENERAL COMMENTS	<p>Thank you for the opportunity to read your study. It is an important topic and overall interesting to read.</p> <p>Comments.</p> <ul style="list-style-type: none">-Title: Consider adding information about the country and location in the title, to highlight the context where you performed your research.- Abstract: Consider having similar aim in the abstract as in the main manuscript. It is enough to write cross-sectional study in the design. And delete “descriptive study”. Consider adding the country and setting in the methods. Maybe also add information about the response rate. Should there be any conclusions and any ideas about implications in the abstract?-Introduction/Background: Consider to rethink the introduction and background and the balance between them, and consider to adding definitions of your main concepts in the background. <p>Does not contain a clear research question/s: consider adding. Consider clarify the novelty of this study in relation to other evidence/previous studies.</p> <ul style="list-style-type: none">-Methods: Add a reference in the study design (STROBE). Please clarify the sampling method and add your total sample and dropouts and response rate. How do you control the exclusion criteria of severe psychological and physical disorder? How many was excluded due to this criterion? Maybe add more information about the setting, were you performed your data collection. The data collection is sparse described. It is possible to clarify the procedure. Any information letter, support, who send out the questionnaires? How you collect the informed consent and the verbal and written information of the study? Internal missing? And statistical analysis?-Results: If it is possible to refine the results of the analyses, there will be a bit of repetition if they are presented in the method. It is
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	<p>suggested that the result follow your research questions, and possibly clarify your hypothesis related to your result. Consider clarifying the Class 1,2,3 Table 2. Consider adding or change information about the average monthly income (yuan) to and international audience/readers. Maybe add info in the Table (*....). What is mean with "Job title" Yes/No? -Discussion: Please highlight your novelty results in the discussion. What new results and evidence were found in this study.</p> <p>Strengths and limitations of the study should be strengthened. Consider to adding strength of your study, especially when you have a large data/ a lot of n=/high power. Consider adding more specific clinical implications from this study results?</p>
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REVIEWER	Palese, Alvise Univ Udine
REVIEW RETURNED	29-Aug-2023

GENERAL COMMENTS	<p>The manuscript is interesting. I have the following suggestions (a) the concept of benefit finding should be better introduced in the introduction/background - it is a little bit confused in this moment. (b) second some sentences should be revised - as the following ' According to prior study, improving the perceived professional benefit of nurses reduces burnout reduction and enables nurses to approach their work with a good attitude and obtain more favourable comments 21 22.' You cite two studies, and not only one. There are other issues across the paper. (c) The latent profile analysis (LPA) has been introduced in the background - this section should be removed. The LPA is a method. In the background I expect to see the gap of knowledge or the advancements that the study is aimed at cover. The fact that this method has never been used in this field - is not a sufficient reasons to perform a study. Therefore, I suggest to move this section in the method section and to expand the rationale of conducting the study. (d) The STROBE guideline - should be included as a supplementary table check list (e) inclusion criteria regarding the minimum experience have not been sufficiently supported by a rationale (f) The discussion contains several theoretical aspects that should be introduced in the background - the discussion should be also developed to strengthen its consistency.</p> <p>At the overall level the study is important. More focused on the real research gap and the knowledge prodded with regard with that available is required.</p>
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VERSION 1 – AUTHOR RESPONSE

Reply to Reviewer 1:

1. Title: Consider adding information about the country and location in the title, to highlight the context where you performed your research.

Response to reviewer:

Thanks for your good advice, we have added the country in the title.

2. Abstract: Consider having similar aim in the abstract as in the main manuscript. It is enough to write cross-sectional study in the design. And delete "descriptive study". Consider adding the country and setting in the methods. Maybe also add information about the response rate. Should there be any conclusions and any ideas about implications in the abstract?

Response to reviewer:

Thanks so much for your review, we have revised the abstract section according to your comments.

3. Introduction/Background: Consider to rethink the introduction and background and the balance between them, and consider to adding definitions of your main concepts in the background.

Response to reviewer:

Thank you for pointing out this problem, we have revised the introduction section according to your comments.

4. Does not contain a clear research question/s: consider adding.

Response to reviewer:

Our proposed research questions are organized as this:

To our knowledge, it has not been shown that sufficient evidence exists to answer the questions of whether nurses' perceived professional benefits differ in groups and what factors contribute to these differences.

5. Consider clarify the novelty of this study in relation to other evidence/previous studies.

Response to reviewer:

We believe that the formulation of the research question also contributes to the novelty of this study.

6. Methods: Add a reference in the study design (STROBE).

Response to reviewer:

We have added a reference related to STROBE guideline.

7. Please clarify the sampling method and add your total sample and dropouts and response rate.

Response to reviewer:

We apologize for the absence of sampling method in the manuscript, and we have added in the study design section, we clarified it as convenient sampling method. The total sample, dropouts and response rate were described in the participant characteristics section as this:

A total of 1409 nurses completed the questionnaire, while 58 nurses denied participation, for a total number of 1351 questionnaires received. 42 surveys were considered invalid due to insufficient or inaccurate information. 92.9 percent of the final 1309 surveys were correctly returned.

8. How do you control the exclusion criteria of severe psychological and physical disorder? How many was excluded due to this criterion?

Response to reviewer:

We apologize for the lack of rigor. We changed the exclusion criteria as: logical errors or missing information in questionnaire answers.

9. Maybe add more information about the setting, where you performed your data collection.

Response to reviewer:

We have detailed the information of data collection as follows:

During the dates of July 6 and July 27, 2022, data was gathered. Wenjuanxing (www.wjx.cn) was used to develop a web-based questionnaire. Two researchers reviewed the online questionnaire for rigor and verified the feasibility of the questionnaire by completing it within the team. A poster was created to present the link and QR code. It was clearly shown on the poster who would be included and excluded from the survey. We distributed the questionnaire nationwide in China and did not limit the source and setting of nurses. The researcher contacted administrators or general nurses to disseminate the questionnaire. Wechat was used to send the poster and information letter. The survey can be completed by clicking on the link or scanning the QR code, completed questionnaires can be returned directly to the web.

10. The data collection is sparse described. It is possible to clarify the procedure. Any information letter, support, who send out the questionnaires?

Response to reviewer:

We have added the descriptions in the manuscript.

11. How you collect the informed consent and the verbal and written information of the study? Internal missing? And statistical analysis?

Response to reviewer:

We apologize for the confusion in the description, the informed consent was set up in questionnaire.

We revised the descriptions as follow:

Prior to completing the survey, participants will be provided with information about the purpose of the study and the major substance of the research. They will then be able to provide their informed consent through a yes or no response.

12. Results: If it is possible to refine the results of the analyses, there will be a bit of repetition if they are presented in the method. It is suggested that the result follow your research questions, and possibly clarify your hypothesis related to your result.

Response to reviewer:

Sincerely thank you for your suggestion, this aspect of latent profile analysis is not widely used at the moment, and in order for the reader to understand the methodology, we have clearly described the specific research methodology and analysis process. With the addition of our research questions, we believe that the current findings can be maintained.

13. Consider clarifying the Class 1,2,3

Response to reviewer:

We have added the following description:

A class represents different categorisation methods, such as a class 1 for a single subgroup, a class 2 for two heterogeneous subgroups, and so forth.

14. Table 2. Consider adding or change information about the average monthly income (yuan) to and international audience/readers. Maybe add info in the Table (*....). What is mean with "Job title" Yes/No?

Response to reviewer:

We have added an info the Table 2. As to "Job title", we thought it should be leadership role, and we have revised them all in the manuscript.

15. Discussion: Please highlight your novelty results in the discussion. What new results and evidence were found in this study.

Response to reviewer:

Thanks for pointing out the shortcomings of our research. We highlight the novelty of the study in terms of the actual findings as well as the theoretical implications of the study.

16.Strengths and limitations of the study should be strengthened. Consider to adding strength of your study, especially when you have a large data/ a lot of n=/high power.

Response to reviewer:

We have added some strengths in the manuscript:

To the best of our knowledge, this is the first study to use the LPA approach to explore heterogeneous subgroups of nurses' perceived professional benefit with a large sample size, and we presented a unique perspective and a basis for future research on the perceived career benefits of nurses.

17.Consider adding more specific clinical implications from this study results?

Response to reviewer:

Thanks for your positive comments, we revised this section as follows:

Our research has theoretical and practical implications for the future study of nurses' perceived professional benefits. First, the number of night shifts, leadership role, and marriage status are the most significant factors affecting nurses' perceived professional benefits, and in the future, we should focus on the degree of influence of these three factors and explore the mechanisms from the theoretical level. Second, managers should pay active attention to the perceived professional benefits of clinical nurses, create a favorable working environment and professional growth atmosphere, and promote the professional success of nurses. Given that 11.8% of nurses still have a low perceived sense of career benefit, more tailored intervention programs are still needed in the future.

Reply to Reviewer 2:

1.The concept of benefit fining should be better introduced in the introduction/background - it is a little bit confused in this moment.

Response to reviewer:

Thank you for pointing out this problem, we have revised the introduction section according to your comments.

2.Some sentences should be revised - as the following ' According to prior study, improving the perceived professional benefit of nurses reduces burnout reduction and enables nurses to approach their work with a good attitude and obtain more favourable comments 21 22.' You cite two studies, and not only one. There are other issues across the paper.

Response to reviewer:

Thank you for pointing out this problem, we have revised them in the manuscript.

3.The latent profile analysis (LPA) has been introduced in the background - this section should be removed. The LPA is a method. In the background I expect to see the gap of knowledge or the advancements that the study is aimed at cover. The fact that this method has never been used in this field - is not a sufficient reasons to perform a study. Therefore, I suggest to move this section in the method section and to expand the rationale of conducting the study.

Response to reviewer:

We accept your positive comments, we removed these sentences in the background. As to the rationale of conducting the study, we explained as this:

To our knowledge, it has not been shown that sufficient evidence exists to answer the questions of whether nurses' perceived professional benefits differ in groups and what factors contribute to these differences.

4.The STROBE guideline - should be included as a supplementary table check list

Response to reviewer:

Thanks for the heads up, we've added it.

5. Inclusion criteria regarding the minimum experience have not been sufficiently supported by a rationale

Response to reviewer:

Thank you to point out this problem, we have deleted this description.

6. The discussion contains several theoretical aspects that should be introduced in the background - the discussion should be also developed to strengthen its consistency.

Response to reviewer:

We apologize for the confusion of the descriptions in the discussion. Additionally, we considered it confusing to present the theoretical aspects in the background. Therefore, we deleted these sentences.

VERSION 2 – REVIEW

REVIEWER	Drott, Jenny Linköping University
REVIEW RETURNED	08-Oct-2023
GENERAL COMMENTS	All queries are resolved.

VERSION 2 – AUTHOR RESPONSE