Reviewer’s report

Title: Epidemic investigation of benign prostatic obstruction with coexisting overactive bladder in Shanghai Pudong New Area and its impact on the health-related quality of life

Version: 0 Date: 14 May 2019

Reviewer: Research Square

Reviewer's report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?
No - there are minor issues

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?
Yes - methodologies are adequate and well implemented, assumptions are addressed, analysis is robust

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?
No - there are minor issues

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?
No - there are minor issues

Could an appropriately REVISED version of this work represent a statistically sound contribution?
Probably - with minor revisions

STATISTICAL REVIEWER COMMENTS:

The present research has explored the severity of the benign prostatic obstruction (BPO) with coexisting overactive bladder (OAB) and its significant effect on the health-related quality of life (HRWOL). Effective diagnosis and treatment model of BPO with coexisting OAB may be developed based on the findings of the present research.

The authors have applied chi-squared, t-test, ANOVA, linear regression, univariate and multiple logistic regression analyses for their data. They have shown their findings illustratively in tabular form (except in few areas) to make their findings trustworthy.
Show Hosmer and Lemeshow’s measure (RL2) or Cox and Snell's measure (RCS2) or Nagelkerke's measure (RN2) as the effect size. Show the confidence interval of the odds ratio. Other comments have been given with this peer review.

REQUESTED REVISIONS:

ADDITIONAL REQUESTS/SUGGESTIONS:
General comments:
Trial registration: Rewrite the sentence clearly.
Show the associated p value when you mention significantly different or not.

Specific comments:
Background: The authors have mentioned "Currently, the relationship between BPO and OAB remains unclear, and large epidemic investigations of BPO with coexisting OAB are lacking worldwide." Clarify how you concluded this.

Methods:
Mention study design and basis of the sample size calculation.

Quality control:
* The authors have mentioned "All investigators were professionally trained." Clarify how they were trained, who trained them and what the contents of the training package were.
* The authors have mentioned "When any problems were detected, the original records were checked and the corresponding contents were revised as appropriate." Elaborate specifically what you revised and how you improved the contents.

Statistics:
* The authors have mentioned "For quantitative variables with non-normal distribution, group comparisons were performed using a nonparametric test." Elaborate upon the nonparametric test.
* The authors have mentioned "Linear regression was used for collinearity diagnostics." They are suggested to mentioned values of variance inflation factor (VIF) and tolerance to prove this.

Results: It would be better to interchange the order of tables 1 and 2 because demographic characteristics (as in table 2) are better in the first table.

Discussion:
* Rewrite Discussion section with critical evaluation of your findings; just giving background information and repeating results are not sufficient.
* The authors have mentioned "In contrast, chronic bronchitis or chronic obstructive pulmonary disease, hypertension, coronary heart disease, and cerebrovascular disease did not significantly impact the morbidity of BPO with coexisting OAB" but they have not shown this information in any of the tables. So, either keep that information in table or discard this statement.
* The statement 'smoking and drinking were not associated with the prevalence of BPO' mentioned in the sentence "Furthermore, the present results show that the morbidity of BPO with coexisting OAB is lower in highly-educated participants compared to that in participants with less education, while smoking and drinking were not associated with the prevalence of BPO" is not shown in the Results section.
It is better to keep the paragraph "Patient-reported outcomes (PROs) refer to any report from … OABSS score is highly correlated with the IPSS score" in the Background section.

It will be better to keep the paragraph "The HRQoL is an assessment of how an individual's well-being … used to translate the original KHQ into Chinese[22,23]" under Background section.

It is better to keep the paragraph "BPO commonly coexists with OAB and consequently decreases … rational allocation of health resources can help improve the QoL of patients" in Background section with the reduction of the unrelated descriptions.

Table 1: Mention exact p values (not just p<0.05). Also, mention p values for all the characteristics (not only significant but also non-significant)

Tables 1, 3 and 4: Show all significant and non-significant p-values exactly to avoid the potential problem of p-hacking. This researcher degree of freedom may sometimes create problem of the external validity of their findings.

Table 5: Show b and SE as well. You may keep 'b (SE)' format on one column. It is better to keep the individual education level previously in Table 2.

Table 5 and 6: Show Hosmer and Lemeshow's measure (RL2) or Cox and Snell's measure (RCS2) or Nagelkerke's measure (RN2) as the effect size. Show the confidence interval of the odds ratio.

Please confirm that you have included your review in the ‘Comments to Author’ box?

As a minimum standard, please include a few sentences that outline what you think are the authors’ hypothesis/objectives, their main results, and the conclusions drawn. Your report should constructively instruct authors on how they can strengthen their paper to the point where it may be acceptable for publication, or provide detailed reasons as to why the manuscript does not fulfill our criteria for consideration. Please supply appropriate evidence using examples from the manuscript to substantiate your comments. Please break your comments into two bulleted or numbered sections: major and minor comments.

Please note that we may not be able to use your review if no comments are provided.

Please only upload as attachments annotated versions of manuscripts, graphs, supporting materials or other aspects of your report which cannot be included as text in the ‘Comments to Author’ box.

Yes

Are the methods appropriate and well described to allow independent reproduction of experiments?

Please state in the ‘Comments to Authors’ box below what you think are the strengths and weaknesses of the methods (study design, data collection, and data analysis), and what is required, if anything, to improve the quality of reporting

No
Does the work include the necessary controls?
If not, please explain in the ‘Comments to Author’ box below.

No

Are you able to assess the statistics?
- Are the statistical test(s) used in this study appropriate and well described?
- Is the exact sample size (n) reported for each experimental group/condition (as a number, not a range)?
- Are the description of any error bars and probability values appropriate?
- Are all error bars defined in the corresponding figure legends?
- Has a sample size calculation been included, or a description and rationale about how sample sizes were chosen?

Please can you confirm which of the following statements apply to your statistical assessment of the manuscript (Please include details of what the authors need to address in the ‘Comments to Author’ box):

I have been able to assess all of the statistics in this manuscript (please refer to checklist above)

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in the ‘Comments to Author’ box below.

No

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Should the manuscript be highlighted for promotional activity?
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No

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

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If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

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