Reviewer’s report

Title: Factors influencing the attention to home storage of medicines in China

Version: 1 Date: 18 Mar 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
No - there are minor issues

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
No - there are minor issues

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?
No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?
N/A - there are no statistics in this study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are major issues

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: The present research has explored the home medicine storage behavior of the community people at six Chinese provinces. This has explored their level of attention to medication related issues. Also, waste disposal would be made appropriately based on this information.

The authors have observed the medicines being stored in household levels in 625 households. They have kept the questionnaire as the supplementary file. Since the study was multicentric community level, the study findings might be made trustworthy (provided that they analyzed the data with the
relevant statistical tests like chi square test, Fisher's exact test or other).

The authors have not applied relevant inferential statistic for the analysis of their dataset. They have just interpreted their findings in figure form (which could have been shown in tabular form for better illustration). Other comments have been given with this peer review.

ADDITIONAL REQUESTS/SUGGESTIONS:
General comments:
* Use proper subject-verb agreement with the word 'data'.
* Antibiotics automatically refer to medicines; no need to write 'antibiotics medicines'.

Specific comments:
Title: Since most of the questions (from question 8 to 19) were focused on identifying the level of attention to medication related issues, it would be better to elaborate them on title.

Methods:
* Elaborate upon sampling technique, sample size calculation with basis (both households and respondents). It is not clear how many respondents were there from each households.
* The authors have not applied any inferential statistical analysis, in the absence of which the conclusions are not trustworthy.

Study design: Clarify the number of persons from each households selected. It is not clear from the research.

Questionnaires and data collection:
* The authors have mentioned "Data was collected using a structured questionnaire." Elaborate how the questionnaire was developed. Was it self-developed or adopted?
* The authors have mentioned "The questionnaire was pretested on … not useful were removed." It is customary practice to pretest in 10% of the projected sample size. Also, elaborate upon the province and study population where the pretesting was performed. Was it performed on the similar situation or matched population where the final study was carried out?
* The authors have mentioned "Useful information that had not … developing additional questions." Elaborate which question was added later after pretesting was finished.
* The authors have mentioned "In contrast to other previous studies … status of home medicine storage [1,2,5]" and "A total of 20 questions were used … status of home medicine storage." Likert scale generally gives the measure of attitude; not measure of status.
* The authors have mentioned "For pilot testing, the questionnaire was sent … medical schools and medical logistics specialists." Elaborate upon those hospitals and medical schools.
* Elaborate upon the timing of data collection mentioned in the sentence "In each household, data was collected … time of data collection."

Data analysis:
* Elaborate upon the version of SPSS mentioned in the sentence "SPSS was used for data analysis."
The authors have mentioned "The descriptive statistics was used to analyze the demographic characteristics of the respondents and then factor analysis was conducted." Elaborate upon the 'factor analysis'.

The authors have mentioned "The validity of this study was ensured by … then evaluated by 20 specialists." How these specialists were selected and were they independent of the present research?

The statement "Reliability was established by estimating the Cronbach's Alpha value" has been redundant.

Rewrite the sentences "The Cronbach's Alpha value or internal consistency value … suggested minimum values of 0.6 [9,10]" in logical order.

Results
Sample profile:

Elaborate upon 'usable questionnaires were received' and '62.5% (625/1000)' mentioned in the sentence "At the end of the period, after removal of duplicate responses, a total of 625 completed and usable questionnaires were received, equating to a response rate of 62.5% (625/1000)."

The authors have mentioned "The majority of respondents, 61.9% (387/625) in the households visited were females." Elaborate where were males in the households.

No need to explain all age groups, education level and family members in the sentences "In terms of age groups, 78.4% (490/625) of respondents …1.4% (9/625) of households had only one member." Just show them in table.

Prevalence of home storage of medicines:

Specify 'external painkillers' and 'external anti-inflammatory antidotes'.

Show the information mentioned in the sentences "The expiration date of medications is a vital factor in the home storage … but still needed more attention" in table.

Gender: Show the information mentioned in "From analysis of variance, significant differences were … male respondents was better than that of females" in tabular form.

Educational background: Show the information mentioned in "The respondents who had been educated to … affect home medicine storage practices" in tables.

Age: Show the information mentioned in "Through the analysis of variance, significant differences … after 75 years of age, attention declined with age (see Fugure 3)" in tables.

Occupation: Show the information mentioned in "From our data, significant differences amongst different occupations … all categories of medicines that are stored at home in China" in tables.

Family members: Rewrite the sentence "No significant differences were observed … home storage behaviors of medicines by analysis of variance (p<0.05)" clearly.

Attention on the prevalence of home storage of medicines:

The authors have mentioned "The information from this study is … presence of medicines in homes." Elaborate upon those risks.

Write the sentence "Antibacterial drugs (40.1%) are the most … in old Dutch patients [2,5]" clearly.

Rewrite the sentence "As a result, more medicines home storage … were no longer used" clearly.

The authors have mentioned "This is a universal problem in other countries around the world
[11-13]." How could you generalize that it was universal problem just based on three articles carried out in Mexico, UAE and Greece?
* Rewrite the sentence "This may result in poorer medicine home storage behaviors" clearly.

Attention to the storage environment:
* Cite the reference to that evidence mentioned in the sentence "For the storage of refrigerated medicines, temperatures between 2 and 8°C are necessary as there is supporting evidence that medicine degrades rapidly."
* The authors have mentioned "Adverse medicine reactions may occur due to degraded medicines." Specify those reactions with specific examples.

Attention to home storage location:
* Rewrite the sentence "Most of the households had a home pharmacy to … humidity and temperatures that may promote instability" clearly with simpler sentences. Also, specify 'home pharmacy'.
* Write the sentence "Other factors such as use of … particularly elderly patients [21]" clearly.
* Rewrite the sentence "However, the difference was the age group was more than 75 years old" clearly.
* Keep citations to those studies mentioned in the sentence "Occupation is also an important factor … focused on this aspect."
* Rewrite the sentence "Okumura indicated that … confirmed in our current study" clearly.

Reference: Rewrite references 9 and 10 clearly.

Additional files: Keep *Additional file 1, *STROBE checklist, *STROBE Statement because they are not contained in the manuscript.

Figure 1: Specify the medications. You may keep them as supplementary file. Also, show frequencies.

Figure 2 and 3: It would be better to show them in table with the associated frequencies and percentages.

Note: This reviewer report can be downloaded - see attached pdf file.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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

Acceptable

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