

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)	Neonatal mortality and leading causes of deaths: a descriptive study in China, 2014-2018
AUTHORS	Liu, Yuxi; Kang, Leni; He, Chunhua; Miao, Lei; Qiu, Xiaoqiong; Xia, Weipeng; Zhu, Jun; Liang, Juan; Li, Qi; Wang, Yanping; Liu, Min

VERSION 1 – REVIEW

REVIEWER	Ratovoson Rila Pasteur Institute, Madagascar
REVIEW RETURNED	28-Oct-2020

GENERAL COMMENTS	<p>The study aimed to estimate the national and urban-rural levels and causes of neonatal deaths in China annually between 2014 to 2018. However, there is a lack of information on inequalities in rural and urban areas. Table 1 shows, for example, that congenital malformation, although values are decreasing annually, was much more common in rural areas. Not surprisingly, however, the authors might mention some reason for example that the lack of screening in rural areas could have led to this high frequency. The analyses should be more in-depth: adjustments by region, by landlockedness should be carried out. Information on the progression of the pregnancy should also be taken into account. The definition commonly used for neonatal mortality is the number of deaths during the first 28 completed days of life per 1 000 live births in a given year or period with early (< 7 days) and late (7-28 days) neonatal death. Here, the authors studied all neonates of surveillance districts (gestational week \geq 28 weeks) who died after delivery. Analyses on these 2 groups should also be of interest. Authors should also check the manuscript before submission because words are repeated or missing in some sentences.</p> <p>Comments: Abstracts: It is important to mention if the leading preventable causes of neonatal deaths are the same in urban and rural area. Strengths and limitations of the study: Please delete either 'provides' or 'describes' in the second bullet point. Introduction Last sentence of the first paragraph: "the Chinese government has always ... achievements in reducing child mortality". Please mention some example Second paragraph: "The biggest challenge for China ... children under 5 deaths." Why do the authors say that it is the biggest challenge?</p>
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	<p>The advantages of urban versus rural areas should be further developed in the introduction.</p> <p>Materials and methods</p> <p>Data Availability Statement: this section should be in the supplementary files. I propose to remove the name of the staff of the department who monitors the email.</p> <p>Results</p> <p>Table 1 should be commented on a little more.</p> <p>Page 15, first paragraph, second sentence: ‘ As a result, ... 1.1% in 2018.’ The word ‘care’ is missing</p> <p>Discussion</p> <p>The first paragraph deserves more in the introduction.</p> <p>Page 17, first paragraph, 2nd and 3rd sentences: ‘This is closely ... women at reproductive age [19].’ How can the authors attribute these results? Have additional analyses been carried out?</p> <p>Page 18: “The risk of premature birth ... that of singletons[28].’ What about this statement in the data?</p> <p>Page 18: “Hence, for urban areas, ... less than 32 weeks age.” This sentence is not clear</p> <p>Page 19: “Hence, the government needs to implement ... especially in rural areas.” Sentence too banal, the author should propose more precise recommendations.</p> <p>Figure 2A and 2B. please correct: ‘cause-specific neonatal deaths”</p>
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VERSION 1 – AUTHOR RESPONSE

Point-by-point responses to Reviewer

On behalf of my co-authors, we thank you very much for giving us your positive and constructive comments and suggestions on our manuscript entitle “Neonatal mortality and leading causes of deaths: a descriptive study in China, 2014-2018” (ID: bmjopen-2020-0426549).

Reviewer comments

Comments to the Author

The study aimed to estimate the national and urban-rural levels and causes of neonatal deaths in China annually between 2014 to 2018. However, there is a lack of information on inequalities in rural and urban areas. Table 1 shows, for example, that congenital malformation, although values are decreasing annually, was much more common in rural areas. Not surprisingly, however, the authors might mention some reason for example that the lack of screening in rural areas could have led to this high frequency.

The analyses should be more in-depth: adjustments by region, by landlockedness should be carried out. Information on the progression of the pregnancy should also be taken into account.

The definition commonly used for neonatal mortality is the number of deaths during the first 28 completed days of life per 1 000 live births in a given year or period with early (< 7 days) and late (7-28 days) neonatal death. Here, the authors studied all neonates of surveillance districts (gestational week \geq 28 weeks) who died after delivery. Analyses on these 2 groups should also be of interest.

Authors should also check the manuscript before submission because words are repeated or missing in some sentences.

Response: Thank you for your suggestions, we have divided neonates deaths into early neonatal deaths (<7days) and late neonatal deaths (7-27days).We have revised Table 1 and taken the proportion of causes of death into Table 2 (See line 214-238, page 12-17).

Moreover, we have added a description of the differences between urban and rural neonatal causes of death, and those between early and late neonatal deaths (See line 251-276, page 18-19). The reasons analysis of inequalities in rural and urban areas has been added in the Discussion part (See line 342-359, page 23).

The information on the progression of the pregnancy cannot be included due to the surveillance system limitation.

Reviewer's Comments:

Abstracts:

It is important to mention if the leading preventable causes of neonatal deaths are the same in urban and rural area.

Response: Thank you for your suggestion, we have added this in the abstracts (See line 54-56, page 3)

Strengths and limitations of the study:

Please delete either 'provides' or 'describes' in the second bullet point.

Response: Thank you for your kindly reminding, we have re-write the Strengths and limitations of the study part (See line 66-73, page 4).

Introduction

1. Last sentence of the first paragraph: "the Chinese government has always ... achievements in reducing child mortality". Please mention some example.

Response: Thank you for your suggestion, we have added some example with reference after this sentence (See line 89-93, page 5).

2. Second paragraph: "The biggest challenge for China ... children under 5 deaths." Why do the authors say that it is the biggest challenge?

Response: We have deleted this sentence and revised this paragraph of Introduction (See line 107-122, page 6)

3. The advantages of urban versus rural areas should be further developed in the introduction.

Response: Thank you for your suggestion, we have added the advantages of urban versus rural areas part into the last paragraph (See line 115-120, page 6).

Materials and methods

Data Availability Statement: this section should be in the supplementary files. I propose to remove the name of the staff of the department who monitors the email.

Response: Thank you for your kindly reminding, involving the Data Availability Statement part is one of the author guideline request, therefore we cannot submit this part as supplementary files. We will remove the name of the staff of the department and put this part at the end of the manuscript. (See line 423-432, page 27)

Results

1. Table 1 should be commented on a little more.

Response: Thank you for your suggestion, we have revised the Table 1, the neonatal deaths have been divided into early neonatal deaths and late neonatal deaths. We have added comments about the difference between urban-rural areas and early-late neonatal deaths in the third and fourth

paragraph of the Cause of neonates mortality in China from 2014 to 2018 of Result part (See line 253-278, page 18-19).

2. Page 15, first paragraph, second sentence: 'As a result, ... 1.1% in 2018.' The word 'care' is missing.

Response: Thank you for your kindly reminding, we have added this word (See line 292-293, page 20).

Discussion

1. The first paragraph deserves more in the introduction.

Response: Thank you for your suggestion, we have revised and taken this paragraph into the Introduction (See line 95-105, page 5-6)

2. Page 17, first paragraph, 2nd and 3rd sentences: 'This is closely ... women at reproductive age [19].' How can the authors attribute these results? Have additional analyses been carried out?

Response: The sentence "This is closely related to the rapid growth of China's economy^[18], the continuous improvement of transportation, and the improvement of the educational level of women at reproductive age^[19]" has been removed.

3. Page 18: "The risk of premature birth ... that of singletons[28]." What about this statement in the data?

Response: The sentence "The risk of premature birth is significantly higher in ART infants than in infants conceived naturally^[27]" has been removed, and we have added two more references to prove the "The NMR of twins is several times higher than that of singletons". (See line 333-334, page 22)

4. Page 18: "Hence, for urban areas, ... less than 32 weeks age." This sentence is not clear

Response: This sentence has been changed from "Hence, for urban areas, it is suggested that urban areas need to pay more attention to the prevention of the death of premature infants less than 32 weeks age." into "Hence, urban areas need to pay more attention to preventing premature deaths less than 32 weeks of gestation". (See line 339-340, page 22)

5. Page 19: "Hence, the government needs to implement ... especially in rural areas." Sentence too banal, the author should propose more precise recommendations.

Response: Thank you for your suggestion, we have removed this sentence. The recommendations have been concentrate on the last paragraph of the Discussion part (See line 368-392, page 24-25).

6. Figure 2A and 2B. please correct: 'cause-specific neonatal deaths'

Response: Thank you for your suggestion, the titles of these figures have been changed.

Looking forward to hearing from you. Thank you and best regards.

VERSION 2 – REVIEW

REVIEWER	Ratovoson Pasteur Institute of Madagascar, Madagascar
REVIEW RETURNED	18-Jan-2021

GENERAL COMMENTS	Thanks to the authors for improving the manuscript. There are still some recommendations for the form: abbreviations such as U5MR and IMR should be developed at the beginning in the introduction.
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VERSION 2 – AUTHOR RESPONSE

Point-by-point responses to Reviewer

On behalf of my co-authors, we thank you very much for giving us your positive and constructive comments on our manuscript entitle “Neonatal mortality and leading causes of deaths: a descriptive study in China, 2014-2018” (ID: bmjopen-2020-042654.R1).

Reviewer comments

Comments to the Author

Thanks to the authors for improving the manuscript. There are still some recommendations for the form: abbreviations such as U5MR and IMR should be developed at the beginning in the introduction.

Response: Thank you for your comment, we have developed all abbreviations at the beginning in the introduction.

Looking forward to hearing from you. Thank you and best regards.