

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

|                            |                                                                                                                                        |
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| <b>TITLE (PROVISIONAL)</b> | Estimating daily salt intake based on 24-hour urinary sodium excretion in adults aged 18–69 years in Shandong, China                   |
| <b>AUTHORS</b>             | Bi, zhenqiang; Zhang, Ji-Yu; Yan, Liuxia; Tang, Junli; Ma, Jixiang; Guo, Xiaolei; Zhao, Wenhua; Zhang, Xiaofei; Li, Jianhong; Chu, Jie |

### VERSION 1 - REVIEW

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| <b>REVIEWER</b>        | Yangfeng Wu<br>Peking University Clinical Research Institute, China |
| <b>REVIEW RETURNED</b> | 20-Mar-2014                                                         |

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| <b>GENERAL COMMENTS</b> | <ol style="list-style-type: none"><li>1. The paragraph on strength and limitation is too long and not explicitly stated.</li><li>2. The statistical method used is not matching the sampling method. A more appropriate method adjusting for the cluster sampling errors should be used.</li><li>3. The definition of obesity should be given in the Methods.</li><li>4. The references are not really up to date.</li><li>5. Table 1 should be simplified. Only the Totals and %s are useful.</li><li>6. In Table 2, the %s of overweight, obesity, income and education should be put strately under the Means, not under the SDs.</li><li>7. Table 3 and 4 should have SD for each mean.</li><li>8. The language requires a lot more improvement by a native speaker.</li><li>9. STROBE should be followed.</li></ol> |
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| <b>REVIEWER</b>        | Mary-Anne Land<br>The George Institute for Global Health, Sydney Australia |
| <b>REVIEW RETURNED</b> | 19-Apr-2014                                                                |

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| <b>GENERAL COMMENTS</b> | <p>This paper written by Zhang et al, presents the findings of a robust survey to estimate population salt intake in Shandong. This is an important study which highlights the need for effective salt reduction action. Please note below minor suggestions to be considered before publication.</p> <p>Results<br/>page 9 line 9, in addition to the statement ...51 were excluded...the authors may consider providing the number of excluded samples based on inaccurate urine collections and extreme outliers of urinary creatinine.</p> <p>Discussion</p> |
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|  | <p>page 11 line 11, the authors may consider rewriting the sentence - During taking the national basic public..... to ensure clarity of the concept being expressed. Likewise line 34.</p> <p>page 11 line 51, the authors may consider providing additional information about the salt reduction campaign underway and comments to the likely impact of education and/or providing tools to enact behavior change and/or legislation.</p> <p>Study limitations, the authors may consider elaborating on the strengths and limitations of the study.</p> <p>The authors should amend grammatical and lexical errors throughout the manuscript.</p> |
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### VERSION 1 – AUTHOR RESPONSE

Response to reviewer one:

1. The paragraph on strength and limitation is too long and not explicitly stated.

We have shortened the paragraph on strength and limitation, as follows: “The ‘Gold Standard’ 24-hour urine method was used to estimate salt intake with standard checks for completeness of the specimens based upon urine volume and urine creatinine excretion. Limitation of this study is as below: the sample only included Chinese adults aged 18-69 years, so the results are not extrapolated to other groups; 24h urinary excretion method does not account for electrolyte loss other than via the kidneys, and therefore will tend to slightly underestimate the true intake.”

2. The statistical method used is not matching the sampling method. A more appropriate method adjusting for the cluster sampling errors should be used.

This has been highlighted in the Method, as follows: “Design weight was calculated to account for different factors, including cluster design, strata, and individual. The population data of Shandong province was used to generate post-stratification weight.”

3. The definition of obesity should be given in the Methods.

As required, definition of obesity was added in Page 9, as follows: “Body Mass Index (BMI, relative weight), a simple measure of obesity, was calculated as measured weight divided by measured height squared (kg/m<sup>2</sup>). Overweight was defined as  $24 \text{ kg/m}^2 \leq \text{BMI} < 28 \text{ kg/m}^2$ , and obese as  $\text{BMI} \geq 28 \text{ kg/m}^2$ ”

4. The references are not really up to date.

As requested, we have updated the references No.25 and No.26

5. Table 1 should be simplified. Only the Totals and %s are useful.

As requested, Table 1 has been simplified.

6. In Table 2, the %s of overweight, obesity, income and education should be put strately under the Means, not under the SDs.

As requested, %s of overweight, obesity, income and education had been put strately under the Means.

7. Table 3 and 4 should have SD for each mean.

As requested, SDs for each mean are provided in table 3 and 4.

8. The language requires a lot more improvement by a native speaker.

The language has been improved.

9. STROBE should be followed.

As suggested, we have adjusted the discussion with reference to STROBE.

Response to reviewer two:

## Results

page 9 line 9, in addition to the statement ...51 were excluded...the authors may consider providing the number of excluded samples based on inaccurate urine collections and extreme outliers of urinary creatinine.

As suggested, we have revised the sentence as follows: "A total of 2061 urine specimens were eligible for the analysis and 51 were excluded which were inaccurate urine collections or extreme outliers of urinary creatinine."

## Discussion

page 11 line 11, the authors may consider rewriting the sentence - During taking the national basic public..... to ensure clarity of the concept being expressed. Likewise line 34.

As suggested, we have revised the sentence as follows: "Now resident health records are being established in Shandong province, it is necessary to evaluate and record the salt intake for individuals by FFQ or other method. Especially during following up the chronic patients and it's high risk population, it is very important to focus on the salt intake and persuade them to change the habit of high salt intake." ; "The severe situation should be drawn attention by the government. Action on salt reduction must be taken. Health education and promotion by the media campaign or other forms would increase public awareness, as well as timely community based, specific initiatives to limit the amount of salt added to food by individuals."

page 11 line 51, the authors may consider providing additional information about the salt reduction campaign underway and comments to the likely impact of education and/or providing tools to enact behavior change and/or legislation.

As suggested, we have added additional information as follows: "Public education by TV, internet, film, broadcasting, etc is underway to improve the level of the residents on low salt diet knowledge. To enact behavior change, salt spoons are provided for every family in the whole province. The key groups are trained such as governors, medical staff, stakeholders from food processing enterprise and restaurant. Some local standards about the salt volume in the Shandong cuisine and soy sauce pickles are formulated."

Study limitations, the authors may consider elaborating on the strengths and limitations of the study. We have shortened the paragraph on strength and limitation, as follows: "The 'Gold Standard' 24-hour urine method was used to estimate salt intake with standard checks for completeness of the specimens based upon urine volume and urine creatinine excretion. Limitation of this study is as below: the sample only included Chinese adults aged 18-69 years, so the results are not extrapolated to other groups; 24h urinary excretion method does not account for electrolyte loss other than via the kidneys, and therefore will tend to slightly underestimate the true intake."

The authors should amend grammatical and lexical errors throughout the manuscript.

As requested, we have amended grammatical and lexical errors.

## VERSION 2 – REVIEW

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| <b>REVIEWER</b>        | Yangfeng Wu<br>Peking University, China |
| <b>REVIEW RETURNED</b> | 15-Jun-2014                             |

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| <b>GENERAL COMMENTS</b> | The authors stated "Of 2184 subjects, 2061 subjects with complete data were included in this analysis (response rate, 94.4%)." But Table 1 indicates there were only 51 subjects with incomplete data. However, 2061+51=2112, which is not equal to 2184. What happened with other 72 subjects?<br><br>Did the study asked subjects to report back if any urine was missed |
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|  | <p>during the 24 hours for urine collection? and was there any one found missing some urine?</p> <p>The current descriptions on the study limitation need to be improved. Many of them are not real limitations, such as using Chinese as study sample. The aim of the study was not to report salt intake for other countries and even not for China. It was for Shangdong where more than 95% of residents are Chinese. And the study did not exclude any other ethics.</p> <p>Languang needs to be improved by a native speaker.</p> |
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### VERSION 2 – AUTHOR RESPONSE

1. There were 123 subjects with incomplete or inaccurate urine collection. We have corrected it.
2. 2184 subjects were asked to report back regardless of whether some urine was missed during the 24 hours for urine collection. There were some subjects who were found missing some urine.
3. As requested, we have revised the limitation as follows: "A limitation of the study was that only a single 24-hour urine collection was obtained from each participant. A single collection will less accurately reflect 24-hour sodium intake than will several collections. However, the day-to-day variation in sodium excretion can vary in both directions, so it is unlikely that the findings overstated the inaccuracy of the claim of a low sodium intake."
4. As suggested, we have improved the language by a native speaker.