Author’s response to reviews

Title: Estimation of the adolescent pregnancy rate in Thailand 2008-2013: An application of capture-recapture method

Authors:

Bunyarit Sukrat (bunyarit_su@hotmail.com)
Chusak Okascharoen (Chusak.oka@mahidol.ac.th)
Sasivimol Rattanasiri (sasivimol.rat@mahidol.ac.th)
Wichai Aekplakorn (wichai.aek@mahidol.ac.th)
Jiraporn Arunakul (o_ohka@hotmail.com)
Kittipong Saejeng (ktpjeng@gmail.com)
Dankmar Böhning (D.A.Bohning@soton.ac.uk)
Ammarin Thakkinstian (ammarin.tha@mahidol.ac.th)

Version: 1 Date: 07 Mar 2019

Author’s response to reviews:

Friday, March 8, 2019

Dear Editor,

The manuscript "Estimation of the adolescent pregnancy rate in Thailand 2008-2013: An application of capture-recapture method" (PRCH-D-18-00813) has been assessed by the reviewers. They have raised a number of points that would improve the manuscript. We would like to submit the revised manuscript with necessary correction according to reviewers' comments. The point-by-point response was provided as follows.

We declare that we have no conflict of interest in connection with this paper. We also declare that this submitted material has not been published and is not under consideration for publication elsewhere.

Yours sincerely,

Chusak Okascharoen, M.D., Ph.D.
Section for Clinical Epidemiology and Biostatistics
Faculty of Medicine, Ramathibodi Hospital
Mahidol University
Reviewer reports:

Ruth S Buzi, Ph.D. (Reviewer 1): This study used a capture-recapture method to more precisely estimate rates of adolescent pregnancy in Thailand between 2008-2013. The results of the process indicated that rates of teen pregnancy are slightly higher than reported by official reports. Accurate estimation of teen pregnancy rates in a country where various practices affect data accuracy, is important. The study should clarify the following:

Comment:

1. Abstract:
   The statement under Background "and also allocation of resources for working with this problem" is unclear.
   We have re-written this sentence. (page 3 line 1-2)
   It is unclear to me from the description of the study methodology why the authors define the study design as cross sectional hospital-based. Is it a survey or registry-based study?
   Actually a study design for survey or registry-based is a cross-sectional study given measurement was performed only once. However, we have re-written this, see page 3 lines 8-11.
   The result section is heavy with data. Could the authors summarize the main findings instead of providing all the details?
   We have re-written the result section according to comment. (page 3 lines 14-22)
   The authors should briefly describe the implications and contributions of the study.
   Done, see page 4 line 4.

2. Introduction:
   The authors should provide information on the current data regarding teen pregnancy rates in Thailand.
   We have added a sentence about information of data in Thailand, page 5 lines 16-18)
   The authors should be consistent in using either past tense or present tense.
   We have checked this and also re-checked by Stephen Pinder, a native English speaker.
   The authors should address the importance of securing accurate data in affecting policies to address the needs of pregnant teens.
   We added a sentence about this, see page 5 line 18-19.

3. Methods:
   This section needs some organization and clarification. I would like to refer the authors to the following study that organizes the information in a very efficient way: "Using the capture-recapture method to estimate the human immunodeficiency virus-positive population". Jalal Poorolajal, Younes Mohammadi, and Farzad Farzinara. Epidemiology & Health. 2017; 39: e2017042.
We have read the article you suggested and have re-written the methods to make it clearer. Please clarify if the study was approved by the IRB and what type of approval was obtained.

Done, page 6 lines 3-6.

4. Results:
This section is very long. The authors should reorganize and shorten the section. The reference I suggested could provide some ideas about the organization of the results.
We have re-written this part to make it more concise as suggested.

5. Discussion:
The discussion is very long. It may include some information that should have been added to the methodology.
We have re-written this to make it shorter and more concise.
The authors should address the limitations of the study and the capture recapture design.
We have re-written this, page 15 line 15 to page 17 line 5.
The authors should be more specific in elaborating on the implications and contributions of the study.
We have re-written this, see page 18 lines 4-9.

General Comments: the study should be reviewed for grammar accuracy.
We have asked Stephen Pinder, a native English speaker to proofread and correct the whole manuscript.

Reviewer 2 (Reviewer 2): 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)?

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

No - there are major issues

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

Not sure - key details are missing from the manuscript

Statistics - Is the use of statistics in the manuscript appropriate?

No - there are issues with the statistics in the 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?
Maybe - with major revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: This is an interesting and important methodologic study that seeks to improve estimation of adolescent pregnancy rates in Thailand. The authors have augmented nationally available data sources with a national cross-sectional study. Additional information on the CRC methodology implementation and discussion of potential weaknesses in data inputs (specifically miscarriage and abortion) would strengthen this analysis.

Actually we had considered and accounted miscarriage and induced abortion in non-life births. Nevertheless, we have re-written this in the method section to make it clearer, see page 6 line 12-20 and page 9 line 6-7. In addition, we have also added implementation of CRC method in discussion, see page 15 line 15 to page 17 line 5.

REQUESTED REVISIONS:
Comment: The manuscript states that miscarriage, abortion and stillbirth are major sources of under-reporting of adolescent pregnancy rates. This approach only seeks to incorporate estimates of stillbirths. No information on the prevalence of miscarriage or induced abortion is provided. While these events may not be documented in Thailand, additional data inputs may improve estimates, e.g. gestational-age specific rates of pregnancy loss from standard populations, and estimates of hospitalization or health care utilization due to post-abortion or post-pregnancy loss complications.

We have provided data of non-life births including still birth, miscarriage, induced abortion, and abnormal pregnancies in Additional file 1-Table A4. In addition, we have added definitions of these non-live births in the method, see page 6 lines 12-20.

Comment: The authors state that there is a decreasing trend in adolescent pregnancy rates, but no test of trend is presented.
We added a test for trend in the results section, see page 13 lines 7-8.

Comment: Were multiple gestations with mixed birth outcomes (live birth plus stillbirth) counted as a single pregnancy?
Yes, we added a clarification in page 9 lines 7-10.

Comment: The manuscript would be improved by the incorporation of a sensitivity analysis to describe the specific impact of Source 3 on estimates.
We have re-constructed Figure 2 to make it clearer in comparing the CRC estimates with the actual observed cases using Source1, Source1+Source2, and Source1+Source2+ Source3. Results have been added accordingly, see page 13 lines 9-13.
Comment: The supplementary Venn diagram would have greater impact if the circles were proportional to sample size.
We have revised Figure 1 as a proportional Venn diagram as suggested.

Comment: The manuscript does not describe the potential bias resulting from incomplete hospital coverage specific to Source 2.
This issue had been already discussed, but we have re-written this accounting for the second assumption of CRC method in page 16 lines 3-11.

Comment: ADDITIONAL REQUESTS/SUGGESTIONS:
The manuscript needs a thorough review for language. There are a number of places where grammatical errors impact understandability. For example, on page 4, lines 2-3, the subject of the second portion of the sentence is unclear.
We have asked Stephen Pinder, a native English speaker to proofread and correct the whole manuscript.