OPEN PEER REVIEW

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- More motivations for all involved roles in the review process
- Authors' satisfactions from the review process: Increases honesty between authors and reviewers
- Education of both authors and new students
- Prevents reviewers from following their individual agendas and leading to the detection of reviewers' conflicts of interests

You can find out more at:
https://sites.kowsarpub.com/kowsar/knowledgebase/category/tree.html#opr.html

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Published in: International Journal of Cancer Management: 13(8); e106149

Peer Review Report for "Prediction of Colorectal Cancer Incidence Rate in the Counties of Fars Province, Iran: An Application of Small Area Estimation"

Author(s): Reyhane Sefidkar, Amir Kavousi, Mahmoud Torabi, Seyyed Vahid Hosseini, Hojat Alaii

Review Timeline:

Submit Date: 7 Jun 2020
Revised Date: 20 Jul 2020
Accepted Date: 21 Jul 2020

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0) 15 Jun 2020

Dear AE,
Comments and suggestions for this article:
Abstract
1. The abstract seems too short. The number of words should be between 250 to 350.
2. Please mention to study design or type of study.
3. Please mention to statistical method more specifically.
4. Conclusion needs to be more related to the aim of the study.
Introduction
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2. It is needed to give a brief explanation about small area estimation and its application.
Material and methods:
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2. It seems that the independence of observations is one of the assumptions of the defined

model which is not expressed in the statistical analysis section of the manuscript.
3. Inline 11 in the data source section (page 3), it is mentioned that HDI is calculated for all 29 counties while it is not for two of them (Khonj and Gerash). Correction is needed.
4. Replace “We also considered non-informative prior distribution for regression coefficients and variance component in step iii” with “We also considered non-informative prior distributions for regression coefficients and variance component in step iii” in the last line of page 3 and the first line of page 4.
5. What do you mean by “direct estimator” in the statistical analysis section?
Results
1. In general, P4 three last lines: “It is worth mentioning that the counties with the highest rate are the ones with the highest HDI and the lowest incidence rate are attributed to the counties with the least HDI.” replace with “It is worth mentioning that the counties with the highest rate are the ones with the highest HDI and the lowest incidence rates are attributed to the counties with the least HDI.”.
2. Results is too short
3. Please mention goodness of fit criteria, is your mode fits enough good?
4. Please correct the caption of figure 2, indeed this figure shows the estimated incidence.
Thanks

REFEREE: Reviewer | **Revision** (0) 1 Jul 2020

Dear AE,
Regarding this manuscript, it should be noted that the level of English writing and statistical analysis is rather satisfactory. However, the manuscript needs some revisions before final acceptance.
1. The title should be changed to "Colorectal cancer incidence rate determination in counties of Fars province in Iran: An application of small area estimation".
2. Abstract, As far as I know, "Human Development Index (HDI)" is a key indicator of socio-economic status not "Health Development Index". The authors have used the term "Health Development Index" in the Abstract and "Human Development Index" as HDI in the remaining parts of the text. They should clear this controversial issue.
3. Abstract, The socio-economic status cannot be a "risk factor" for CRC. It might be considered as a "related factor".
4. Why have the authors gathered the data from a single hospital in the Fars Province? The generalizability of the sample is under question. Why they have not used the cancer registry data for total diagnosed patients in this province? The Ministry of Health generally gathers the registered cancer data for nearly all provinces of Iran. The utilized data seems to be old and the representativeness of the data is vague. For example, the real population size in this period of time is not clear. The disease mapping is usually presented based on total registered populations.
5. Statistical analysis, step iii, what is the notation $(\beta)\alpha 1$?
6. Statistical analysis, what is the direct estimator of the CRC at the provincial level? How can you determine it?
7. Presenting some descriptive statistics about HDI and other demographic and geographical variables for the counties in appropriate tables or figures may help the readers to be more familiar with the available data.

8. In addition, the predicted values for the incidence rates in counties (and related statistics) should be presented in a separate table.
8. The names and values in figures 1 and 2 are unclear.
9. Figure 3 is redundant and should be omitted. The information of this figure can be appeared in the requested table in comment no. 8.
Thanks.

REFEREE: Associate Editor | **Revision** (0) 1 Jul 2020

Dear EIC,
Based on reviewers' comments, this manuscript needs Major Revision.
Thanks.

REFEREE: EIC | **Revision** (0) 4 Jul 2020

Dear Authors,
Please revise your manuscript according to the reviewers' comments.
Thanks.

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Dear Professor Akbari,

Thank you for the review and comments on the paper titled “colorectal cancer incidence rate in counties of province of Fars in Iran: An application of small area estimation”. We provide a revision of the paper based on the comments and suggestions of two reviewers. In particular, the comments/suggestions of the two reviewers are addressed below. Thank you again for your consideration and feedback.

Sincerely,

Amir Kavousi

Reviewer 1:

Regarding this manuscript, it should be noted that the level of English writing and statistical analysis is .rather satisfactory. However, the manuscript needs some revisions before final acceptance

The title should be changed to "Colorectal cancer incidence rate determination in counties of Fars .1 ."province in Iran: An application of small area estimation

Response: Thank you for your comment. The other referee had this point of view too. So, I put .“prediction” at the beginning of the title

Abstract, As far as I know, "Human Development Index (HDI)" is a key indicator of socio-economic .2 status not "Health Development Index". The authors have used the term "Health Development Index" in the Abstract and "Human Development Index" as HDI in the remaining parts of the text. They should .clear this controversial issue

.**Response:** The manuscript is updated accordingly

Abstract, The socio-economic status cannot be a "risk factor" for CRC. It might be considered as a .3 .""related factor

.**Response:** Done

Why have the authors gathered the data from a single hospital in the Fars Province? The .4 generalizability of the sample is under question. Why they have not used the cancer registry data for total diagnosed patients in this province? The Ministry of Health generally gathers the registered cancer data for nearly all provinces of Iran. The utilized data seems to be old and representativeness of the data is

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Response: On one hand, this data set was extracted from Shahid Faghihi hospital which is the only colorectal research center in Shiraz and was used in various studies. On the other hand, our aim in the current study was indeed to show the application of a small area model as it is mentioned clearly in the title too. We wanted to emphasize that even in situations which we do not have access to sufficient sample sizes and also have zero sample sizes in our interested areas or if our registry system does not have full coverage, we have the opportunity to predict the cancer incidence rate using the mentioned small area .model

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Response: By $f(\beta) \propto 1$, we meant that the prior distributions for regression coefficients are uniform.

Statistical analysis, what is the direct estimator of the CRC at the provincial level? How can you .6 ?determine it

Response: When the parameter of interest in an area is estimated only based on the observations of that area, the estimator is called “direct”. Direct estimator is reliable if there are enough sample units in the .considered area. Direct estimator of the rate is calculated in the usual way that rate is calculated

Presenting some descriptive statistics about HDI and other demographic and geographical variables for .7 the counties in appropriate tables or figures may help the readers to be more familiar with the available .data

Response: We have now added some descriptive statistics about the available demographic variables to the text accordingly. We have shown the available information about HDI in figure 1 too. Unfortunately, .we do not have access to more information

In addition, the predicted values for the incidence rates in counties (and related statistics) should be .8 .presented in a separate table

.**Response:** Done

.The names and values in figures 1 and 2 are unclear .9

.**Response:** We have tried to make them clearer

Figure 3 is redundant and should be omitted. The information of this figure can be appeared in the .10 .requested table in comment no. 8

.**Response:** We have omitted figure 3

Reviewer 2:

Title: title needs the work “prediction”: prediction of colorectal cancer incidence rate…

Response: Done.

Abstract

1. The abstract seems too short. The number of worlds should be between 250 to 350.

   Response: Done.

2. Please mention to study design or type of study.

   Response: Done.

3. Please mention to statistical method more specifically.

   Response: Done.

4. Conclusion needs to be more related to aim of study.

   Response: We have now updated the manuscript accordingly.

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   Response: Done.

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   Response: Done.

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   Response: The manuscript is updated accordingly.

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   Response: Done.

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REFEREE: Reviewer | **Revision** (1) 7 Jul 2020

Dear AE,
The revised version of the manuscript is acceptable.
Thanks.

REFEREE: Associate Editor | **Revision** (1) 12 Jul 2020

Dear EIC,
The revised version of the manuscript is acceptable.
Thanks

REFEREE: EIC | **Revision** (1) 14 Jul 2020

Dear Author,
Please add the ORCID id of at least the first and corresponding authors in authors section when submitting the revised manuscript. You can get an ORCID id from ORCID website at https://orcid.org.
Thank you.

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

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OPEN PEER REVIEW

Revision (2)

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REFEREE: EIC | **Revision** (2) 21 Jul 2020

Dear Author,
The document is reviewed carefully by the reviewers. According to their comments and your revisions as requested, this manuscript is accepted.
Thanks.