Author’s response to reviews

Title: Analysis of factors influencing the frequency of primary care visits among diabetic patients in two provinces in China

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Author’s response to reviews:

First we would like to express our heartfelt thanks to the reviewers and editors for their hard work and valuable comments, which enable us to further our knowledge to a great extent and improve this manuscript.

In this text, we write our responses in cyan color.

Response to the Reviewer 1

ABSTRACT

• Point 1. Where are the keywords?

Thanks, keywords have been added.

Keywords: Type 2 diabetes, frequent attendance, community, utility of care.

• Point 2. The existing survey data on residents' use of primary care medical settings and the related interpretations should be supplemented here, in particular, relevant information on diabetes patients. And then, you go on and explain the motivations, meanings and purposes of your research. (e.g., I recommend that you check out the national health service survey, and/or the health statistics yearbook).
The authors much appreciate this useful comment and suggestion. Modifications have been made accordingly in the revised version on page 3.

There is evidence that use of care services among diabetic patients is vital to overall self-care of diabetes and to optimization of disease-related outcomes. Although diabetes patients in urban regions have better services utilization than those in rural area, lack of knowledge for disease management and delayed treatment are also common in Chinese cities. Recent studies reported that there is low proportion of diabetic patients receiving recommended annual eye and foot examinations in China.

Reference


METHODS

- Point 3. The sampling process is not convincing enough. I don't think Jiangsu and Shandong province can represent all parts of China. Besides, how you conducted your simple random sampling? Probably just be straightforward that the results were from Jiangsu and Shandong provinces. If you do so, please revise the title of your paper.

Thank for the comment. Yes, for a large country like China, its demographics are definitely diversified. Profiles of patients and environmental factors are likely to vary geographically, and, hence, the context in Shandong and Jiangsu may not be representative of all urban and rural areas in China.

We have modified the tile as “Analysis of factors influencing the frequency of primary care visits among diabetic patients in two provinces in China”. Furthermore, modifications on methods have been made accordingly in the revised version on page 4-5.

The cross-sectional survey was conducted in Shandong and Jiangsu Provinces in China between October 2014 and November 2014. Jiangsu and Shandong are among the most prosperous and important provinces in China, with a share of 20% of the national Gross Domestic Product (GDP). First, we selected 2 urban districts (Qingdao city, Wuxi city) and 4 townships (Rushan, Qiyuan, Lianshui, and Sheyang townships) from Jiangsu and Shandong Provinces. Cities and townships were selected by the local program manager. Criteria for city and township selection
include: security, feasibility for travel, and equipped with electronic health records system.

Second, 17 communities were chosen by simple random sampling from hundreds communities in the two cities and four townships. Participants were eligible for this study if they were between 18 and 75 years old, have been registered with primary health stations in local communities at least 1 year and have been diagnosed with type 2 Diabetes. A random sample of 90-100 diabetes patients were drawn from electronic health records provided by the primary health station in local community. Allocation will be done by computer generated randomization.

RESULTS

• Point 4. The results are reported thoroughly. One issue is that, in page 5 lines 35-43, the authors wrote, "last year." How could the research done in 2014 be last year? If it's past year? “Last year” actually refers to the year before the survey.

The phrase “last year” has been replaced by “previous year”.

DISCUSSION

• Point 5. The discussion section summarizes the findings and relates the implications of the findings to previous knowledge on the subject and relevant health policy. Point 6. The authors also highlight the limitations of the study. But, one more limitation, your study was conducted in 2014, and it's 2019 now. Many things may have changed, and it should be added to the note. Thanks.

Thanks for this comment.

The study was conducted in 2014, and may not entirely applicable to the present situation in China. The limitation was added to the revised manuscript.

CONCLUSION

• Point 7. What are the specific implications of your findings for diabetes patients, Policy-making and management?

The ministry of health and primary health care providers should develop behavior change and weight management tools and services that are affordable, easy to use and culturally appropriate to help diabetes patients to self-manage their condition effectively.

The policy suggestion has been added to the Conclusion section in the revised manuscript.
MINOR ESSENTIAL CHANGES

- Point 8. The quality of English could be improved in places.

  e.g.: page 2 line 54: "be developed in China." should be "be implemented in China."; page 3 lines 29-34.; page 5 lines 35-43.; page 7 lines 8-13., etc.

  Yes, sorry for this mistake.

  Modifications have been made accordingly in the revised manuscript on page 2-3, page 6, and page 7.

Response to the Reviewer 2

Background

- Please bring about more details on the efforts the two provinces made on diabetic patients management.

  The authors much appreciate this useful comment and suggestion. The details on the efforts the two provinces made on diabetic management have been added into the background section (paragraph 1 on page 4).

  Local government also implemented strategies to improve the use of diabetic care in community. Shandong and Jiangsu Provinces lies in northern China and southern China, respectively. In recent years, Jiangsu and Shandong governments increased their payment to community for diabetes education. Electronic health record system was used in primary health station to improve the capacity of CHWs. Non-financial incentives including regular training and opportunities for professional development were included as components of community health program in Jiangsu.

Methods

- In page 4 line 11, you mentioned the reason for sampling in Shandong and Jiangsu was the representative economic development level. However, both two provinces have been ranking among the top 3 provinces by GDP for years. Similarly, the two sample cities Qingdao and Wuxi you claimed representing the average standards are well above the average. I suggest the authors rethink about the sampling representativeness and generalizability.

  Thank for the comment. For a large country like China, its demographics are definitely diversified. It's not appropriate for two provinces to represent the country. We have modified the
tile as “Analysis of factors influencing the frequency of primary care visits among diabetic patients in two provinces in China”.

Furthermore, modifications on methods have been made accordingly in the revised version on page 4-5.

The cross-sectional survey was conducted in Shandong and Jiangsu Provinces in China between October 2014 and November 2014. Jiangsu and Shandong are among the most prosperous and important provinces in China, with a share of 20% of the national Gross Domestic Product (GDP). First, we selected 2 urban districts (Qingdao city, Wuxi city) and 4 townships (Rushan, Qiyuan, Lianshui, and Sheyang townships) from Jiangsu and Shandong Provinces. Cities and townships were selected by the local program manager. Criteria for city and township selection include: security, feasibility for travel, and equipped with electronic health records system. Second, 17 communities were chosen by simple random sampling from hundreds communities in the two cities and four townships. Participants were eligible for this study if they were between 18 and 75 years old, have been registered with primary health stations in local communities at least 1 year and have been diagnosed with type 2 Diabetes. A random sample of 90-100 diabetes patients were drawn from electronic health records provided by the primary health station in local community. Allocation will be done by computer generated randomization.

The limitation has been added into the discussion section (paragraph 3 on page 10).

- In page 4 line 50, the authors wrote about maximizing data reliability and validity, however, no metric is provided.

Yes, it is not appropriate to wrote that the pilot-test maximized the reliability and validity of data. We have deleted the sentence.

The purpose of the pilot-test before staring the survey was to identify questions that don’t make sense to participants or problems with the questionnaire that might lead to biased answers. According to the result of pilot-test, we improved the questions and layout that are not clear enough.

- Results: 1) Certain data presented in Table 2 need to be checked. For instance, the sum total of the frequency/proportion of frequent and infrequent visitors under 55 is not equal to 735/48.7. Data given on family history of coronary disease also needs an inspection. 'Sex' might be replaced by 'Gender'.

Thanks. We have checked Table 2 and some mistakes have been corrected.

- 2) According to Table 2, the average age of respondents was 64.4±10.6, while half of them aged over 55, suggesting that many of the respondents might be old adults. Please give a
more detailed age composition. Corresponding modification in multivariate analysis is also recommended.

Thanks for this comment; Age was recoded into a categorical variable with three levels: <55 years, 55-65 years, and > 65 years and the results were listed in table 2.

Univariate analyses revealed that there were not statistically significant correlation between age stratification and infrequent visitor status.

- 3) Table 3 and Table 4 in the backward stepwise regression, you listed several covariates adjusted for, are these all? What about history of diabetes≥10 years, and family history of coronary disease?

Yes, we have listed all covariates adjusted for backward stepwise regression in Table 3 and Table 4.

We have replaced “history of diabetes≥10 years” by “years since diagnosis of diabetes ≥10 years” in Table 2.

Family history of coronary disease was defined as cardiovascular disease in a first degree male relative < 55 and female relative < 65 years of age. We have added the “definition” to the revised manuscript (paragraph 3 on page 5).

- 4) Another, there is a cutting point below and above ¥2000 when including income in regression, which is different with the 4-category variable you used for descriptive statistics. I suggest to follow the more informative one.

Thanks for this comment.

The urban and rural residents have great disparity in income consumption in China. In the present study, the rural residents with per capita household income of more than 50,000 yuan accounted for only 0.7%. The 4-category variable may not be appropriate as covariates for multiple logistic regression analyses stratified by urban/rural area. We recoded the household income into a categorical variable with three levels: <5000 yuan, 5000-20000 yuan, and > 20000 yuan (Table 2). The backward stepwise logistic regression was conducted using the 3-category variable (Table 3-4).

- 5) In page 6 line 23, you mentioned results in Table 4 only briefly. There is a mistake in both the text and table title, it should be factors contributing to infrequent visitor status rather than frequent. Otherwise, it contradicts with results from Table 3 and the main objective of your study.
Sorry for the mistake. We enriched the results. The text and title of table 4 were revised (paragraph 1 on page 7).

- Discussion: In discussion, the authors mentioned a set of policy implications of their study. This is of great importance. I suggest to add one or two policy suggestions on telephone follow-up and household visit.

The data on telephone follow-up and household visits should be recorded in electronic health records, which are basis of public health service assessment. Financial incentives, whether for allowances, or per diem payment, should be provided for CHWs to encourage motivation for telephone follow-up and household visits.

Above of the description has been added into the discussion section (paragraph 3 on page 10)

- In page10 line1, you mentioned 'this is the first study using a multi-community-based general population that documents the utilization of community service in diabetes care', better in a milder tone. There must be similar researches in China. Also, the sampling representativeness and generalizability mentioned above should be considered in limitations.

Yes, the authors have modified the Discussion section and the description of limitation has been added into the discussion section (paragraph 3 on page 10).

Our study focused not only on the utilization of community service in diabetes care but also evaluate the detailed reasons. The results of this study may be useful for evaluating primary health policies based on evidence. The present study has some limitations. The first is related to the cross-sectional nature of the study, which prevented this study from establishing causation. Second, profiles of patients and environmental factors are likely to vary geographically, and, hence, the context in Shandong and Jiangsu may not be representative of all urban and rural areas in China. Third, the study was conducted in 2014, and may not entirely applicable to the present situation in China. Longitudinal studies with a large sample size are expected to further explore these questions.

Once again, the hard work of both two reviewers and editors is very much appreciated.

Sincerely yours,

The authors