Reviewer's report

Title: The use of annual physical examination by rural older adults in China: a cross-sectional study

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Reviewer: Iris Chi

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Review on the Use of Annual Physical Examination by Rural Older Adults in China: A Cross-Sectional Study

The topic itself (i.e., annual physical examination utilization among older adults in rural China) is interesting. However, the organization, conceptualization, and discussion of the manuscript are poorly executed. The paper is not recommended for publication in its present form.

To start with, based on the introduction, the significance and contribution of this study is not clearly written. Information provided in the introduction part is not congruent with the purpose of the study. Specifically, the authors touched upon the link between the use of annual physical examination and the importance of health prevention and promotion (see first paragraph under subheading Introduction). How does the use of annual physical examination influence older adults? Why is the use of annual physical examination important among older adults? Think about the impact of disease burdens and health care expenses at different levels such as individuals, families, communities, and societies.

The authors mentioned the aging population in China and health care polices (see second paragraph under subheading Introduction). The authors need to focus on rural population and health care policy changes related to older adults in rural China as it is clearly stated as the theme of this paper. The uniqueness of health care system in rural China needs to be addressed and elaborated. The information provided on new health care reform is misleading. Since when the annual check-up started to be free to older adults is not clear. Free access to annual physical examination is an important deciding factor. Whether there is any data on accessibility in the survey is not clear and this issue should be addressed.

The authors also cited some findings from previous studies regarding factors related with annual physical check-up service utilization (assuming studies in western context) (see third paragraph under subheading Introduction). Evidence on correlates of annual physical examination in the Chinese context was not found. What is the state-of-art in this area? Are there any culturally appropriate factors that might play an important role in the use of annual physical examination? If so, please provide supporting evidence and rational on choosing those factors in the study. The reviewer believes that there were culturally
specific correlates explored in the study. Due to lack of empirical evidence, the study is theoretically weak.

In the sampling section it says “all the villages in each selected township were grouped into 3 categories according to the distance from the center of the town, and one village was selected randomly from each category. (pp. 6 line 4-6 )” What is the rationale for doing this? Another thing concerns the reviewer is that only individuals listed in health records were selected in the survey. What kind of health records were those? There is potential bias in the sampling framework.

In the design of the questionnaire section, the authors mentioned that they decided 10 items for the health knowledge items (pp. 7 line 12). How did the authors decide to pick those 10 items and which 10 items? Has the scale been validated? How’s the reliability of the scale? The authors need to provide more information on the scale since this is a key variable in the study. For the household member item, it is not clear why it is related to annual physical examination utilization. The authors mentioned “self-rated living status” in the introduction part. How does that relate to household member?

In the results part, the presentation of the results is very confusing. The authors need to separate findings from different analyses (e.g., descriptive, bivariate, and logistic regression). There were not many factors in the final model. The authors need to state clearly what variables were put into the logistic model. Educational level was not significantly associated with the use of annual physical check-up. The insignificant association between educational level and outcome could be caused by measurement issue. The categories of educational levels (i.e., less than 6 years elementary study, elementary, and middle school and above) were not traditionally used in other studies.

In the discussion part, when it comes to occupational levels, the authors mentioned about civil servants in urban area. This is very confusing since the focus of this study is on rural population. The authors also suggested internet-based interventions. On what basis did the authors come up with this suggestion is unclear? This is questionable because it is not supported by the findings of the study. In addition, accessibility to internet and the ability to use internet among older adults would contribute greatly to the effectiveness of those kind of interventions. It is clearly out of the scope of this study. Other five recommendations are not concrete enough to be actually useful. More elaboration is needed.