Author’s response to reviews

Title: Association between Socioeconomic Status and Post-stroke Functional Outcome in Deprived Rural Southern China: a Population-based Study

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Author’s response to reviews:

January 5, 2018

Benjamin Ragen, Editor

BMC Neurology

Dear Dr. Benjamin Ragen:

Thank you very much for your kind decision letter with the editorial and reviewers’ comments concerning our manuscript entitled “Association between Socioeconomic Status and Post-stroke Functional Outcome in Deprived Rural Southern China: a Population-based Study” (NURL-D-17-00323). We have carefully read the comments and found that they greatly helped refine our paper. We have made some essential revisions according to these valuable comments and
provided additional explanation in the original manuscript. These changes will not influence the content and the framework of the article, and they have been outlined in the revised manuscript.

We sincerely hope that our revisions and responses will meet with approval and be finally acceptable for publication in BMC Neurology.

Attached, please find our point-by-point responses to the editor and the reviewers and a revised manuscript with each change outlined. We are grateful for the opportunity to improve our manuscript. Once again, thank you very much for your attention and consideration.

Sincerely,

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A Point-by-point Response to the Editorial and the Reviewers’ Comments

To the Editor:

Comment: This is a well-written study, with interesting and practical findings. The association between socioeconomic status and post-stroke functional outcome in developing countries is less explored. Your findings in the association in stroke survivors in deprived rural Southern China is very enlightenment. Thank you for your submission. We hope that a new version with attachments and supporting materials can be uploaded.

Response: Thank you very much for your kind comments and helpful suggestions for improving our manuscript. We have made some essential revisions according to the reviewers’ valuable comments and provided additional explanation in the revised manuscript. We have also read the editorial policies carefully and revised our manuscript as necessary. A Declarations section has been included as required. We ensure that our manuscript meet BMC Neurology's formatting guidelines.
To the Reviewers:

To Marc Alain Babi, MD (Reviewer #1):

We really appreciate your constructive comments and suggestions for revising and refining our manuscript.

Comment: The only concern with your manuscript is the quality of written English, and therefore I recommends that your manuscript undergoes editing for minor language errors. You can opt to have the text edited either by a native English-speaking colleague or a professional language editing service.

Response: Thank you very much for your constructive comments and advice for revising and improving our manuscript. Following your suggestion, we have used professional language editing service “Editage” (https://www.editage.cn/) for English language editing. They have helped us proofread our manuscript very closely for mistakes and grammatical errors.

To Yasmin Ali O'Keefe (Reviewer #2):

Thank you very much for your constructive comments and advice for revising and improving our manuscript. We really appreciate your help.

Comment 1: Overall, a very well written and defended paper, I found it quite interesting. I particularly found the phenomenon of low adherence to prescribed medications interesting, in preference for herbal remedies an interesting cultural phenomenon as a Western reader.

Response: We are quite appreciated for your praise and encouragement. Thank you. Traditional Chinese herbal medicine has been historically used to treat “stroke” for thousands of years in China, and it is still widely used today [1]. It is well known in China but less known in other countries. However, the evidence of its efficacy and safety remains insufficient. Most Chinese herbal medicines are derived from plants with complex compositions that are difficult to identify [2-3]. Use of Chinese herbal medicine may pose risks for herb-drug interaction, poisoning, and adverse reactions [2-3]. Nevertheless, traditional Chinese herbal medicine is still very popular in China, and a lot of Chinese people believe in its therapeutic effects. In our study, we found the phenomenon of low adherence to prescribed medications (i.e., antiplatelet therapy), and the preference for various herbal remedies in stroke survivors in rural Southern China. This also reflects the unsatisfactory long-term compliance with evidence-based secondary stroke prevention in socioeconomically disadvantaged population from one side.

Comment 2: I think it would do well to discuss the structure of this area's health care system (ie socialized medicine model? primary insurance? Models similar to US medicare/Medicaid service...
demographics for the elderly or destitute) to aid north American (and other countries of origin) understand the structure of Chinese national health care reimbursement. This may help us as foreign readers understand the strengths and challenges faced logistically in medicine for you. For example, with respect to likelihood of head CT, why was the destitute population less likely to have received imaging, ie is it private pay thus they cannot afford it or is there a national health program that would subsidize this (analogous to US Medicaid) vs flat out refusal etc? Overall, very well done.

Response: Thank you very much for your valuable comment and earnest reminding. According to your suggestion, we have provided additional explanation of the structure of this area’s health care system, to help readers better understand the structure of Chinese national health care reimbursement. (Discussion, Page 9, Line 19-22; Page 10, Line 1-17; Page 12, Line 14-18 in the revised manuscript)

China’s national health care system is distinctly separated into urban and rural components, with urban employees covered by the Urban Employees Basic Medical Insurance, unemployed urban residents covered by the Urban Residents Basic Medical Insurance, and rural residents covered by the New Rural Cooperative Medical System (NRCMS)[4]. The NRCMS was launched by the China’s government in 2003, aiming to improve the access to health services, and reduce the risk of catastrophic medical payments resulting from major diseases in vast rural population in China [5,6]. The central and local government bodies (provincial, county, and township levels) and individual rural households subsidize for this insurance systems jointly [5,6]. The government’s finance accounts for more than three quarters of the pooling funds, and the contribution of central government has outweighed those of local governments since 2013, achieving 57.22% for NRCMS [7]. In 2003, the government arranged a RMB 20/ $3.12 per person per year subsidy fund for rural residents, and rural participants paid another RMB10/$1.56 each annually [8]. The subsidy financing level increased gradually and reached RMB340/ $53.12 by 2013 [8]. With the steady improvement of the financing level for NCMS, the rural residents’ participation rate was increased likewise and reached 98.3% in 2012 [8]. In our study, all patients were insured by NRCMS financed largely from the central and local government.

However, recent studies suggested that NRCMS did not sufficiently alleviate the financial burden of rural residents at the current funding level, as reimbursements are relatively low [4,9-11]. In practice, NRCMS reimburses approximately 30% of inpatient expenditures [9]. Unfortunately, we failed to collect individual data on the out-of-pocket and NRCMS-reimbursed expenses in the present study. Wang et al. found that out-of-pocket payments for treatment of stroke averaged RMB3028.4/$484.8 per capita in 2008 in poor rural areas of China [9]. Hence, we can infer that, in the poorest rural households with monthly income of no more than RMB 260/$ 41 per capita in our study, medical expenditure still poses a huge financial burden.

We found that the destitute population were less likely to have received a neuroimaging (CT or MRI)-based diagnosis compared with higher-income counterparts. One possible explanation for
this phenomenon is that poor rural residents may cut down their medical expenses to avoid catastrophic out-of-pocket payments [9]. In addition, the local district health systems in rural areas of China typically offer three levels of health service: township and county-level hospitals provide both inpatient and outpatient services, while village clinics provide outpatient services only [8]. The low-income group prefers to attend low-cost village clinics and township-level hospitals which lack CT or MRI imaging equipment [12].

In our opinion, to further improve the effectiveness of NRCMS, it is necessary to contain healthcare costs, improve reimbursement rate, and raising the funding level of government, individual rural household, or both. Another possibility is to target the poorest households, provide them with additional financial security, such as medical finance assistance. Thank you once again for your valuable suggestions and comments.

References:


