

## Peer Review Report

# Review Report on Does social pension expansion relieve depression and decrease medical costs? Evidence from the rural elderly in China

Original Article, Int J Public Health

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

The authors use a social pension program called New Rural Pension Scheme in China to test whether greater financial security leads to better mental health outcomes for the rural elderly living in China. They find evidence that availability of pension income can cause better mental health outcomes and lower medical costs due to poor mental health issues for the rural elderly. They also find heterogeneous effects of the policy on different groups of people. Primarily, men, illiterate were impacted more. They find the pension scheme improving mental health outcomes for elderly with no economic support from children. However, they find that the pension scheme lowered medical costs due to mental health issues only for those with economic support from their children.

#### **Q 2** Please highlight the limitations and strengths.

This paper is very strong in the methods section. The authors do a really good job at demonstrating causality. They use both a Two Stage Least Squares method and regression discontinuity as identification strategies. Moreover, the use of non-parametric estimation techniques further give credibility to their results. In summary, they have very good results in the paper and defend the methods well. The main limitation of the paper were gaps in communication and the writing. The paper can be improved significantly by adding some details regarding the policy and changing the sentence structuring.

#### **Q 3** Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

Major comments:

I think the authors should add a background section explaining the execution of the pension plan. I am not sure if I understand what determines the pension amount. Does everyone in the village get the same amount of money? Do some people get more money than others? If so, what determines who gets more money? I am not sure if I understand the policy well. This can be a severe limitation for someone because it doesn't clarify the context well, making the results confusing.

Minor Comments:

1. The authors use monetary values that I (and many others I am sure) cannot understand. Is 384 CNY a large amount or a small amount? The authors have two options here: They can either use a relative price framework to explain the cost using reference expenses (like medical cost is 384 CNY per month. Relatively speaking, food expenses can be XYZ CNY). Doing the relative price framework using a reference basket of goods and service (Food in my example) will help readers further understand. Alternatively, they can convert the prices into US dollar value.

2. Equation in line 96 is confusing to me. What does j,k and l actually mean? Are they individual people? Are they the same person from the same household observed in a different time? Are they households?

3. Table 3 (containing results of the 2SLS regression) needs to separate the first stage and second stage clearly. This will make reading the table a lot easier.
4. How do the findings relate to the suicide rates in China since suicide is arguably the worst outcome linked to mental health issues?
5. I find the results for elderly with and without economic support from children quite interesting and I think it needs further analysis. Elderly with economic support might also have a better relationship with their children, which would be correlated with better mental health outcomes. Better relationship with children might be correlated with greater economic support. These two taken together would indicate an upward bias on the beta coefficient. Is there a way to further control for relationship with child better?
6. Please explain some of the variables used in the regression analysis better. For example, how do the authors quantify confidence? How do the authors measure medical costs related to mental health issues versus medical costs unrelated to mental health issues (head injury or bone injury)?

#### PLEASE COMMENT

**Q 4** Is the title appropriate, concise, attractive?

Yes

**Q 5** Are the keywords appropriate?

Yes

**Q 6** Is the English language of sufficient quality?

Needs improvement. There are many run-off sentences and redundancies. A proof reader and professional writing editor can help improve the paper significantly.

**Q 7** Is the quality of the figures and tables satisfactory?

Yes.

**Q 8** Does the reference list cover the relevant literature adequately and in an unbiased manner?)

Yes

#### QUALITY ASSESSMENT

**Q 9** Originality



**Q 10** Rigor



**Q 11** Significance to the field



**Q 12** Interest to a general audience



**Q 13** Quality of the writing



**Q 14** Overall scientific quality of the study



#### REVISION LEVEL

**Q 15** Please make a recommendation based on your comments:

Minor revisions.

