Author’s response to reviews

Title: Validation of the Global Activity Limitation Indicator in Taiwan

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BMC Medical Research Methodology

Editor Comments:

Please find the reviewer's comments below and attached. In addition, we have the below editorial requests that we would like you to address:

- On the title page, please include the email addresses from all co-authors.

Thank you, we added email addresses of all authors on the title page.

- Please provide a heading "Declarations" for the declaration section.

We added the declaration section, please see page 9
- Please clarify if you sought written or verbal consent.

It’s a written consent. We added it at page 3 line 105-107.

The study was approved by the Research Ethics Committee of the National Health Research Institutes, Taiwan (EC1040401-F), and a written informed consent was obtained from the respondents before the interview.

- Please move tables after the references.

We moved tables to page 12-14

- Please remove figure legends from actual figures. Figures should be uploaded without a legend. The figure legends should instead be copied into the main manuscript text after the reference list.

We added Figure Legends at Page 11 and moved the figure to a separate file.

Thank you.

Best wishes,

Dirk Krüger

Reviewer reports:

Herman J. Van Oyen (Reviewer 1): I congratulate the authors for the manuscript well done.

I have some minor comments.

1. Introduction

The authors make especially reference to previous European studies which were transnational, whereas several national studies have evaluated the concurrent validity (the association of GALI
with other health measures, accounting for the severity level of GALI) and next to this the predictive validity of future health outcomes. A review of the different validation studies has been published (Van Oyen H et al. Measuring disability: a systematic review of the validity and reliability of the Global Activity Limitations Indicator (GALI). Arch Public Health. 2018 May 28;76:25.

Thank you very much for the suggestion, we added the following paragraph at Page2 line 48-53.

The GALI is an easy, straightforward question, with good reliability and validity. A systematic review [4] of 9 studies concluded that the GALI has a sufficient repeated-measures reliability in a period of about 20 days, a good concurrent validity that relates to other health variables, and a good predictive validity of future health outcomes. However, researchers remain concerned about the effect of cultural differences on responses.

2. Page 2 line 44

I suggest that next to ref 3, reference is made to the manuscript published by Berger N et al. Harmonising summary measures of population health using global survey instruments. J Epidemiol Community Health. 2016 Oct;70(10):1039-44, as in this paper the criteria for a global measure of disability are discussed. This paper is in fact more appropriate with reference to "A potential solution", while current ref 3 still fits the reference to the use a tool to monitor healthy life years within Europe.

Page 2 line 44

Thank you very much for the suggestion, we all agreed that this ref is more appropriate for referring to “a potential solution.” We used this ref with as the new ref [3].


It may not be necessary to provide the 95% CI of all the study and country specific OR estimates in the introduction.
Thank you very much for the suggestion, we remove unnecessary 95% CI and OR estimates in the introduction.

4. Page 3 line 72 and discussion

The authors of ref 5 discussed that part of the heterogeneity in the strength of the OR may be due to heterogeneity in the survey methodology between the countries.

Thank you very much for the suggestion, we added the following paragraph at:
Page 2 line 72-74
However, there was statistically significant heterogeneity in the magnitude of the odds ratios among the countries for all three measures, which may be partly due to different survey methods across countries [6].

Page 6 line 236-238
With the caveat that the comparability of data might be compromised by the different methods used across surveys, we further investigated the demographics of the sample.

5. Table 3 and discussion

The estimation of the strength of the OR of the mental health indicator is provided only "over and above" the measure of association between GALI and ADL/IADL. Did the author consider a sensitivity analysis to measure the concurrent validity of GALI with the mental health indicator in the subpopulation with no ADL/IADL limitations?

Thank you very much, we performed the sensitivity tests. The results are listed in the table of the "reply to comment file" , and we added the following paragraph at Page 6-7 line 267-272.

Page 6-7 line 267-272.

Sensitivity tests also found that the CES-D was still a good indicator for the GALI in the subpopulation with no ADL/IADL limitations. People in the high CES-D group were more likely to report limitation based on the GALI than those in the low CES-D group: in the subpopulation
without ADL limitations (OR: 4.53, 95% CI: 3.49, 5.87), without IADL limitations (OR: 3.56, 95% CI: 2.51, 5.04), and without both ADL and IADL limitations (OR: 3.61, 95% CI: 2.53, 5.14).

6.

Title of tables should all refer to the study, place and time

Thank you very much, we modified all the title of tables.

Pengsheng Ni (Reviewer 2): I recommended the authors also provide the Relative Risk (or Prevalence Ratio). The Odds Ratios might over-estimated the strength of the association.

Thank you very much for your suggestion, we used Poisson regression approach to calculate the Prevalence Ratio. The results listed in the table of the "reply to comment file". We agreed that The Odds Ratios might over-estimated the strength of the association, but in order to compare with previous EHIS and SHARE studies, we tend to add this part in the discussion, not in the result section.

The following paragraph was added in Page 6 line 224-229.

Moreover, considering that the odds ratios might have over-estimated the strength of the association, we used a Poisson regression approach [10] to calculate the prevalence ratios (PR). The PR for those with/without ADL limitations on reporting the GALI was 3.34 (95% CI: 2.99, 3.74), and 4.82 (95% CI: 4.29, 5.42) for those with/without IADL limitations. These results show that even when using a stricter estimation method, GALI is still significantly associated with ADL and IADL.

Also the author might want to consider presenting the results of comparing ORs and 95% CI across studies in figure.
Thank you very much for your suggestion. Presenting the results of comparing ORs and 95%CI across studies in figure really might help readers to understand the paper more easily. However, we thought that since most of the data were from others work (the EHIS and SHARE studies) and we only provided 1 set of data. Thus, we worried that making a figure might not be suitable (i.e., violating the copyright). Furthermore, the other reviewer (Herman J. Van Oyen) suggested us to remove “the 95% CI of all the study and country-specific OR estimates in the introduction,” and we did. After removing those numbers, it seems more readable. Thus, we decided not to make a new figure.