Author’s response to reviews

Title: First Insights on Value-Based Healthcare of Elders Using ICHOM Older Person Standard Set Reporting

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Dear Editor and reviewers,
Many thanks for the excellent comments of BMC Geriatrics to our manuscript. These comments are of great help to improve the completeness of our manuscript. We provide point-to-point responses to all comments of reviewers. Please do not hesitate to contact us if any further information is needed.

Best Wishes,

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Reviewer #1:

Overview
This paper uses ICHOM indicators to describe baseline measures of a community-dwelling sample receiving geriatric health care services in Taiwan. The ICHOM is a standard set of outcome measures developed to support the ability of healthcare systems to improve quality of care.

Major Comments
1. It is not clear from the Abstract (page 3, line 11) nor the Methods (page 6, line 17) what services the study population is receiving. More information is required to define 'value-based healthcare services' and 'integrated geriatric health care services' to clarify what kind of services they are receiving and any eligibility criteria. Are the services provided in the community—by whom and for whom?
Response: Many thanks for the comment. This is a cross-sectional study to report status quo of value-based healthcare in Taiwan. Interventions of integrated geriatric healthcare services would be introduced in a prospective cohort in the intervention group. In this study, no intervention was introduced to the participants, so they were receiving ordinary primary health care services in Taiwan. To avoid confusion, we deleted related sentence in the abstract (page 3, line 11) and methods (page 6, line 19).

2. The in-text referencing system is not consistent. Superscript references on page 5 lines 9, 12, and 15 and page 12 line 7 do not appear to be correctly referenced nor included in the reference list.
Response: Thank you for your kind notice. We have corrected these mistakes.

3. More information is required about the participants and sampling frame. A flow diagram of recruitment processes would be helpful, including those who were eligible and did not participate.
Response: We have amended a flow diagram of recruitment process as supplementary figure 1 as your suggestion.

4. More information is required in the Methods section about how the metrics were collected—was this part of routine data collected from comprehensive geriatric assessment or specific for research. What are the data sources and who collected the data?
Response: Metrics of value-based measurement were collected specifically for this research instead of routine collection in the comprehensive geriatric assessment. All these data were collected by well-trained research nurses from enrolled participants by questionnaire based on ICHOM Standard Set outcome measures.

5. In the results of subgroup comparisons on page 10, lines 10-11, education, sex, and tobacco use were not significantly different between the high versus low value based health status groups as implied by your statement. Again on page 11, line 12 'women' were stated to have higher health status, which was not supported by the results.
Response: We have revised as you suggested and deleted statement associated with education, sex, non-smoker in page 10 line 10-11, & women in page 11 line 12.

6. The sentence on page 11, lines 2-3 should be reworded. "For every year increase in age, the likelihood of achieving high value-based healthcare status decreased by 5%." Response: We have rephrased the sentences as suggested.

7. In the Discussion, page 11 lines 9-15, the authors imply that those who had higher health status 'received higher levels of value-based healthcare'. This can not be inferred from this cross-sectional data. The sentence should be reworded to "….; those who were younger and cognitively unimpaired had higher levels of value-based healthcare status". Similarly the sentence on page 11 lines 14-15 should be reworded to "Having high disease severity and impaired cognitive function were negatively associated with ability to achieve a high value-based healthcare score." Response: We have rephrased the sentences as suggested.

8. Pages 12, the first sentence should be reworded to "The proportion of Asian participants in this study expressing a preferred place of death or signing a Do Not Recuscitate Agreement was low compared with other studies, [19]; this highlights an unmet need……." Response: We have rewritten the sentences as suggested.

9. Page 12 line 7. Was data on 'adverse drug events or discomfort after taking medications' collected in this study? How was this data collected?
Response: Based on outcome domains of ICHOM standard domains set for older adults, we adopted patients reported data on these items. All participants were asked by “How many physician/pharmacists reported adverse drug events do you have in the past 12 months?” “How many times do you feel discomfort after taking medications in the past 12 months?”

10. Can the authors explain what they mean by 'but some experts advocate considering cost-free health care as well' (page 13 line 1). Is Akpan et al the correct reference here?
Response: It was a miswording. In the original paper reporting ICHOM standard set for older people, Akpan et al argued that there should be some cost-free survey tools as well, although SF-36 could cover many outcomes and reduce complexity, so we mentioned the argument for cost-free survey tools instead of cost-free health care. We have revised the erratum.

11. Some of the measures that are in Table 1 are not defined in the Methods eg number of falls, number of adverse drug events, episodes of discomfort after medications, hospital admissions, length of stay. Over what period are these items measured?
Response: All these variables were measured within a 12-month period. We have amended in the table 1

12. The authors should discuss the clinical implications of their study—how will the findings be used to improve quality of care?
Response: We have amended clinical implications of the study in the discussion.
“Based on findings from the study, stakeholders may devise tailor-made interventions for this population and examine their effectiveness accordingly.” (Page 13 line13-15)

Minor Comments
Line 4, page 6> Reword to ‘…..outcomes for older persons will be conducive to supplanting…..'
Response: We have reworded the sentence as suggested.

Reviewer # 2
GENERAL COMMENTS:
This article addresses an important topic—namely the limitation of clinical guidelines in the context of frailty and multimorbidity. Overall, the article is well-written but with notable opportunities for greater clarity discussed below.

The term "high value based health status" should be operationally defined in the Introduction. Not having an operational definition disadvantages the authors' contribution as the term is open to interpretation by the reader's perspective and the variation for how such terms are used in different countries.
Response: We totally agree with your excellent comment, and have amended associated statements in the introduction.

"ICHOM standard set for older adults might provide an operative definition for high value-based healthcare services and an opportunity for healthcare provider and policy makers to examine and refine services provisions.” (Page 6, line 5-7)

The authors raise the expectation of the readership by referencing "person-centered goals" in the Conclusions of the abstract and of the manuscript as a whole but then do not make a connection between person-centered goals and the study findings. Greater context is needed or perhaps the reference to goals should be replaced with a broader term such as "whole person care".
Response: Many thanks for your comment. We have revised the term person-center goals as a "whole person care" as suggested in abstract and the main text. Currently, the study presented status quo of value-based healthcare in Taiwan. Interventions of integrated geriatric healthcare services inclusive with person-centered goals would be introduced in a prospective cohort, which is under way and we intend to report in due course.

This study does not evaluate the entire standard set for older adults as presented on the ICHOM website https://www.ichom.org/portfolio/older-person/. Perhaps the authors might provide their rationale for inclusion/exclusion. The absence of carer support/burden seems particularly noteworthy as a mitigating factor.
Response: Many thanks for your excellent comment. Indeed, we faced a realistic challenge from assessing care support and burden because Chinese version of 4-item screening Zarit Burden
interview was unavailable, which limited our application in this study. Therefore, we could not involve this measurement until the assessment instrument is available (Page 14, line 2-3)

REQUESTED REVISIONS:
Presenting the data in terms of both linear and logistic regression analyses is a strength. The collection of supplemental variables to carry analyses further and provide an additional level of validation is another strength.
Response: Many thanks for your appreciation.

Page 7, lines 17-18 - an important word is missing— is the missing word "one" or "all"? This would seem to have important implications for interpreting the data in the Results section.
Response: It is “all”. “People in whom of these all components were affirmed were classed as having high participation in decision-making.”

The study population was served by an integrated geriatric health care service and as such may not be representative of the broader population of other adults in Taiwan. The selection of this study population might contribute to an overfitting of the ICHOM model. Could the authors speculate as to what would the distribution of scores may be in a population of older adults not served by a specialized clinic?
Response: Because the assessment was performed before any intervention was provided, we believe it still fits the general conditions in Taiwan. However, extrapolation of our study results to other populations may need certain validation. We have added in discussion section. (Page 14 line 13)

The ICHOM variables are a combination of self-reported and professional-assessed. Most of these variables are not routinely collected, even in an integrated geriatric health care clinic. It would seem relevant to this study to articulate who collects this information and how often should the variables be re-evaluated. What is the burden of data collection for patients and professionals? To reduce this burden, perhaps the authors might discuss the trade-offs of data collection (which for all 10 contributing variables is substantial in the routine delivery of health care) in terms of comprehensiveness versus efficiency. Would a smaller number (for example, 3) of these 10 variables give you adequate insight (for example, 60%-70% of the information provided by all 10 variables)?
Response: Data from the study were collected by well-trained research nurses and participants would be followed every three months. We presented the way to collect parameters of ICHOM standard set in supplementary table 1, which might reflect burden of completing these tests, but we did not collect consuming time to complete these tests. As for your valuable suggestions to reduce contributing variables, it would be done when the longitudinal follow-up completed. Then, we would be able to conduct an outcome-based factor analysis.

It is also worth pointing out that not all of these variables are actionable within the context of traditional health care delivery and would require partnership with community-based organizations.
Response: Many thanks for your comment and we do agree with your comments and added that in the discussion. (Page 13 Line18-19, page 14 line 1-7)
Minor edits:
Page 10, line 13 - need space between "high" and "care"
Response: We have revised it.
Page 12, line ? - change "take" to "make"
Response: We have revised the word as suggestion.
Figure - Staatus instead of Status
Response: We have corrected the word “staatus” in figure 1.
ADDITIONAL REQUESTS/SUGGESTIONS:
It seems that the results of this study make the case that cognitive impairment should be included in ICHOM—might the authors state this more directly in the Discussion?
Response: As your suggestion, we directly point out cognitive assessment should be involved in the ICHOM standard set. “Our results show that cognitive function per se was highly associated with high value-based healthcare status and might be considered amended in metrics of the ICHOM Standard Set.”(page 13 Line 17-18)
In the Discussion, perhaps the authors might elaborate on what challenges are faced by scaling such a clinical data collection approach in Taiwan or other countries.
Response: We have added that in the discussion.(Page 13 Line18-19, page 14 line 1-7)