Reviewer’s report

Title: Development and validation of Elder-Friendly Urban Spaces Questionnaire (EFUSQ)

Version: 0 Date: 16 Jul 2019

Reviewer: Crystal Kwan

Reviewer's report:

Strengths:

General:
* The authors provided a clear statement of the aim of the research - develop and validate a new scale for assessing elder-friendliness of urban spaces, and highlighted its importance and relevance in p. 3
* The methodology used (e.g., grounded theory in phase 1) to develop and validate the new scale was appropriate and aligned with what the authors stated (in p. 3) as important in elder-friendly studies (e.g., grounded in local surveys, local attributes, in grounded approaches, population-specific tools, older people's expectations/perspectives)
* In Phase 1 (qualitative component), the authors used semi-structured interviews and focus group discussion to triangulate the data. Further, they included various validity strategies (e.g., member checks, peer checks, and including additional 5 interviews after saturation has been achieved)

Regarding Item Generation
* A strength in this area is that the authors combined inductive (qualitative research using interviews with target population) and deductive ("desk study" - literature review) methods, which is a recommended strategy for developing new assessment instruments

Regarding theoretical analysis (context validity)
* A strength in this area is that the authors considered both the opinions of experts (panel of 9 experts) and the target population (18 older people face validity) in the assessment of item content
* A strength is that the authors piloted the questionnaire twice, first on a group of 18 older people and then on a group of 42 of the elder people who participated in the qualitative phase

Regarding psychometric analysis (construct validity and reliability)
* A strength is that the authors used different ways/techniques to assess the validity of the new scale including Average Variance Extracted, Confirmatory Factor Analysis and Convergent Validity PLS
* Regarding reliability, a strength is that the study used internal consistency (vis-a-vi split-half reliability) as a measure of reliability which is consistent with other studies but also utilized other measure of reliability including item reliability and composite reliability
* Another indication of internal consistency is that the number of initial items (73) on the scale is significantly larger than the final set (40).

Areas that need to be addressed:

General:
* The authors do not have a limitation section and this needs to be integrated into the paper (see below for some gaps)
Specific:
* While a strength of this study is that the researchers used random sampling to recruit its 350 participants (in Phase 2), the researchers did not detail how randomization was achieved. Please indicate this briefly (e.g., 1-2 sentences)
* Regarding the sample size and number of items, a general rule of thumb is that a minimum ration of participants to items is 10:1 (10 participants for every item). Please either note this as a limitation or justify the smaller sample size and ground it in the literature.
* Clearly provide the dates throughout the scale development process
  I am a bit confused as Phase 1, the authors mentioned the interviews with the 54 older adult participants were conducted in June to August 2018, and then in Phase 2, they said that the 350 surveys were conducted in the summer of 2018? There is a discrepancy there - both phases are not conducted at the same time?
* While the authors indicated on p.23 under "authors' contributions" that the two were involved in conducting all interviews and focus groups - this should also be indicated somewhere in the methodology section.
* A brief section detailing the manual instructions for using this new measure
* P. 3, Line 3-4: "The population of older people … is predicted to grow from 524 million…" - indicate is this the global population? National population?
* P. 3, Line 8-9: "Studies have revealed…." But only one study is cited, please indicate at least one more to substantiate your claim.
* The authors use elder-friendly and age-friendly interchangeably - it is best to be consistent and stick with one term. Perhaps elder-friendly since this term is used in naming the measurement scale. However, the term age-friendly can be kept for citing the documents/initiatives that use this term (e.g., Age-Friendly Cities initiative)
* A thorough review for grammatical errors, attuning to language conventions, etc. Below I note some examples, but I have not included all:
  E.g., p.3 line 3-4: add space between "…older people aged ≥ 65…"
  E.g., indent first line of a paragraph
  E.g., p. 5, line 35-36: "The interviews were carried out in [with] 54 older participants who are [were] presents in …"
* The authors noted that in Phase 1, purposive sampling was used to gain a diverse sample set - especially concerning SES. However, the education levels of all the 54 participants are high (all post-secondary education) - with undergraduate level as the lowest. This perhaps needs to be noted and recognized as a limitation.
* P. 10, line 16-17: "…two gentralogists…” - what is a gentralogist? Do you mean gerontologist?
* P. 11, line 35-36: "…especially among old people." - perhaps a more consistent term to use is older adults?
* Rationale/explain why respondents were only selected from the 10th municipality region? Why this region only?
* In the discussion section, a different style of in-text citation is being used from earlier sections - be consistent throughout the manuscript and align it with the BMC journal reference style

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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