Reviewer’s report

Title: Validity and reliability of measures to assess constructs from the Inner Setting domain of the Consolidated Framework for Implementation Research in a pediatric clinic network implementing HPV programs

Version: 0 Date: 27 Nov 2018

Reviewer: Andre Nyberg

Reviewer's report:

The authors addresses an important topic, investigating the validity and reliability of a measure used in implementation research. The authors report that the Inner setting measures demonstrated good validity and adequate reliability with the exception of available resources. The authors conclude that their results extend previous work by providing additional psychometric evidence to support the use of these Inner Setting measures in pediatric clinics implementing human papillomavirus programs.

The article is well written, the rationale for the study is provided in a clear and logical way and the methods used to assess validity and reliability are, in general, well described. I have some concerns/questions that I would recommend the authors to address.

1) I would suggest to include in the methods section information about the strength (e.g., accepted cut-offs) of the intra-rater reliability analysis as well as for the discriminant validity analysis in a similar way as for the cut-offs used to address the fit of the models created. In the results section, the authors address this, for example on page 13, lines 19-25 "The ICC(2) values ranged from 0.34-0.67 where they were all below the recommended levels (0.7 to 0.8 and higher) [24,25], indicating a lower than desired level of reliability for group means" Nevertheless, I would recommend to include these cut-offs also in the methods section.

2) Furthermore, the authors examines the reliability of the measure with an ICC analysis. This provides information about the relative reliability of the measure, however I would also recommend an analysis of the absolute reliability of the measures (e.g., exploring the SEM) and to provide information about the MDC of the measures.

3) Provide more information amount which type of ICC(2) measure that was used. For intra-rater reliability analysis are often a two-way mixed absolute agreement model recommended. Was this used?
4) For the reliability analysis, the authors only report the mean ICC values. I would recommend to report also the lower and upper bounds of the reliability analysis. See Koo et al. Journal of Chiropractic Medicine (2016) 15, 155-163

a) The authors conclude that the measure has adequate reliability. Considering the reliability measures, is this actually true? In Table 6, mean ICC values range between 0.34 to 0.67 which would imply poor to moderate reliability. Considering that the lower bounds of the mean ICC values are even lower, I would highly question the reliability of the measure. What are the authors opinion on this?

5) Even though the sample size was large, I would recommend to provide information on a sample size calculation for the different measures of validity and reliability.

6) In the discussion (page 14, lines 4-7) the authors report that: "While the measures demonstrated good validity, there is additional work that can be done to improve reliability, in particular for the available resources measure." Could the authors provide any information on how they think that the reliability of the measure could be improved? Later in the discussion, the authors suggests that "Therefore, future research should focus on investigating factors that could impact reliability such as examining how people in different job types within a clinic respond to these clinic-level constructs."

a. Could there be other factors, in addition to different job types, that could affect the reliability?

b. Considering the large sample size of clinical staff, I would recommend to do a sub-analysis based on job types to explore the impact of job status on the reliability of the measures? This however, requires support from a power analysis.

7) How is the tool intended to be used? Is it more on a clinical staff or network level? If the former, than the low reliability measures needs to be further addressed. If the goal is that the constructs should be used in research and practice settings than the low reliability would be a highly limiting factor for the use of the measurement.

8) I would recommend the authors to follow GRRAS or COSMIN guidelines to improve the reporting of the findings.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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

Unable to assess

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

Yes

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