PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	A multi-methods study to develop tools for competency-based assessments of implementation research training programs in low and middle-income countries.
AUTHORS	Alonge, Olakunle; Rao, Aditi; Kalbarczyk, Anna; Ibisomi, Latifat; Dako-Gyeke, Phyllis; Mahendradhata, Yodi; Rojas, Carlos; Jacobs, Choolwe; Torpey, Kwasi; Gonzalez Marulanda, Edwin; Launois, Pascal; Vahedi, Mahnaz

VERSION 1 – REVIEW

REVIEWER	Bimali Sanjula SACTRC, Faculty of medicine
REVIEW RETURNED	16-Feb-2024

GENERAL COMMENTS	Excellent

REVIEWER	Charuni Malalasekara Faculty of Medicine, Department of Community Medicine Medicine
REVIEW RETURNED	20-Feb-2024

GENERAL COMMENTS	This article demonstrates the outcomes of a multi- methods study to develop tools for competency- based assessment of implementation research training programs in low- and middle-income countries. This is based on the research for the development of framework for core competencies in implementation research in low- and middle-income countries (LMIC) [1] Despite the introduction of the framework for core competencies in implementation research in LMIC in the above study, development of validated tools for the assessment of the effectiveness of training programs in implementation research in LMIC are lacking in the literature. Therefore, this research can be considered as a timely effort to fill this gap in the literature. This study involved 166 participants from five different universities in LMIC, who were following IR courses. All the selected universities participated in the initial IR core competencies framework development study. Based on the IR framework described above, a self-assessment questionnaire for the self-assessment of IR knowledge and IR self-efficacy and an objective assessment tool with 40 true/ false statements based on general concepts of IR were developed and used before and after an index IR course. The data obtained from the self-assessment tool was used to establish the construct validity using exploratory factor analysis while the data obtained from the objective assessment tool was used to determine the internal consistency using item response theory.

In addition, qualitative data was collected using interviews with key informants (both students and trainers) and analyzed using deductive thematic analysis.

Originality
This is an original piece of work.

Importance of the work to general readers
The general readership will be benefited by this research as they can get an idea of the effective assessment methods in implementation research training programs in low- and middle-income
countries. The organizers of implementation research training programs can use these validated tools to assess the effectiveness of their training programs rather than simply using the traditional tools that only assess the knowledge. As implementation research is mostly focused on implementation of
interventions, these tools will help to modify the training programs to train the implementation researchers more practically.

Research question
1.   Research question is adequately answered.

Introduction
2.   The introduction clearly describes the need for this study and its importance to future training programs.

Overall design of the study
3.   The overall study is designed appropriately to address the research question. Both quantitative and qualitative methods have been used for the validation of the tools designed.

Participants
4.   The inclusion and exclusion criteria and the rationale for selecting only the given 5 universities is not clearly stated.
5.   Although briefly stated in the methods section, the inclusion and exclusion criteria of selecting the participants is also not clearly mentioned in the 'study populations section'. Even within the methodology section, it is only indicated that all students enrolled in the index IR course participated in both self-assessment and objective assessment activities.
6.   There is no indication of the method used to obtain consent.
7.   There is a lack of clarity regarding the criteria used to select the 20 students and 5 trainers for the qualitative interviews.
8.   Additionally, the process for selecting individuals outside the index IR course who are interested in IR for assessment, as well as the assessment method, is not clearly explained. It is only vaguely mentioned as "where possible."
9.   The questionnaires were provided in three languages, but there is no mention of the process or individuals responsible for the translations, which can impact how the questions in the questionnaire are perceived to the participants. This piece of information is important because it can influence how participants perceive the questions in the questionnaire.

	Methods
	10. There is an absence of a clear description regarding the structure, duration, and learning outcomes of the index IR course utilized in this study. Since various universities offered different IR courses, it is uncertain whether all these courses included the concepts used in formulating the questionnaires.
	11. The questionnaires were distributed within one week before and one week after the index IR course. However, no rationale was provided for choosing this specific time frame.
	12. The self-assessment questionnaires were used to evaluate previous IR activities. However, this time frame does not permit the assessment of post-training active IR activities, which would be beneficial for validating the results.
	13. It would have been beneficial if the objective assessment could also evaluate the effectiveness of the course in practical aspects outlined in the framework for core competencies.
	14. The qualitative research does not explain how students and course instructors were purposively selected. Furthermore, the categorization of students into three groups based on high, average, and low self-efficacy and knowledge is not clearly defined in numerical parameters.
	15. If all the qualitative interviews were conducted in English, it raises questions about potential language barriers and how they were addressed. However, this is not explained.
	16. The selection process for interviewers and whether they received any training beforehand is not described.
	Results
	17. The results are well presented and analyzed and are credible despite the limitations explained in the discussions section, specially COVID 19 pandemic.
	Interpretations and conclusions
	18. The discussion section is well organized and provides a clear description of the limitations encountered. The conclusions drawn are adequately supported by the interpreted data.
	References
	19. The references are up to date and in correct format.
	Abstract
	20. Abstract is well organized and reflects the key idea of the paper.
	21. However minor typographical errors need correction.
	Documents in the supplemental files
	22. Documents in the supplemental files are well organized and supports the research article.
	23. But few minor typographical errors need correction.
	References
	[1] Alonge O, Rao A, Kalbarczyk A, et al. Developing a framework of

	core competencies in implementation research for low/middle-income countries. BMJ Global Health 2019;4:5:e001747

VERSION 1 – AUTHOR RESPONSE

Comments to the Author:

Excellent

Thank you for your comment.

Reviewer: 1
Competing interests of Reviewer: Yes, my account is up to date.

THANK YOU

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Reviewer: 2

Miss Charuni Malalasekara, Faculty of Medicine, Teaching Hospital Kurunegala

Comments to the Author:

The research article is a timely effort to address a gap in the literature. The research question is adequately answered through this research with a well-organized presentation.

Thank you for your kind and constructive feedback. We have made updates to the manuscript as described below and in specific sections of the paper.

However, the methodology section should be further elaborated to include the criteria used in the selection of different participants for the study and the process used in conducting the interviews.

We have further described the criteria used in the selection of the different participants and the process used in conducting the interviews. Please see paragraph 1, page 9 and paragraph 3, page 10.

The nature of the index IR courses selected, including their time durations, concepts covered, etc. is also unclear to the reader.

We have further described the index IR courses, including their time durations, concepts covered – as well as clarified the other courses that students were expected to undertake as part of the implementation research-related degree program. Please see paragraph 1, page 7, and Box 2 on pages 6 and 7.

although the ethics approval is obtained, it is worthwhile to mention the consent of the participants (as it is stated that all the students enrolled for the IR courses were included in the research.)

We have clarified that only students who volunteered to participate in the assessment were included – and that we obtained informed consents from all interviewed respondents. Please see paragraph 1, page 9 and paragraph 3, page 10. We sought voluntary participation from all students enrolled in an index IR course or those interested in IR in each institution – the students could choose either to participate or not participate in the assessment.