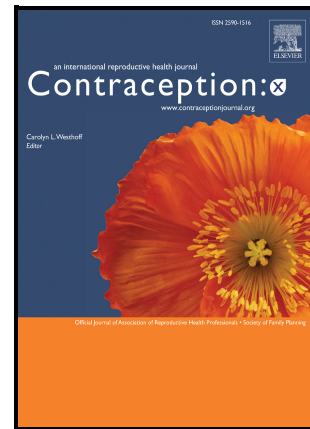


Evaluation of the LMUP in Ethiopia: requirements, challenges and best practice

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Evaluation of the LMUP in Ethiopia: requirements, challenges and best practice*Letter to the Editor*Geraldine Barrett^{a*}, Email: g.barrett@ucl.ac.ukAna Luiza Vilela Borges^b, Email: alvilela@usp.brJustine N. Bukonya^c, Email: jbukonya@musph.ac.ugArarso Baru Olani^d, Email: ararsob@gmail.comJennifer A. Hall^a, Email: Jennifer.hall@ucl.ac.uk

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As researchers with extensive experience in evaluating the London Measure of Unplanned Pregnancy (LMUP) [1], we applaud its use in the PMA Ethiopia project and the decision to evaluate it [2]. Although the evaluation did not aim to create a short-form measure, the authors conclude that "an abbreviated, 4-item version of the LMUP" would be preferable for Ethiopia and sub-Saharan Africa rather than the original 6-item measure that is used worldwide. This is a radical recommendation, with implications for international comparability and we are concerned that the psychometric analyses presented are not sufficiently robust to support this.

Normally a comprehensive translation and cultural adaptation process for psychometric measures involves forward and backward translation and an expert committee. The authors report creating

three language versions (Amharic, Tigrinya, and Afan Oromo) by forward translation only of the Malawian Chichewa LMUP. There is no mention of cultural adaptation, which is particularly important for item 6 to ensure local relevance. The authors report just five cognitive interviews, surprisingly low given the need to test three translations, and they do not present individual assessments of the psychometric properties of each language translation, which is essential before combining data.

Significantly, there were important changes to the LMUP question order in the PMA Ethiopia questionnaire [3], and intermingling with other questions; facts that would normally be reported and considered in an evaluation. The question sequence starts with a timing question. Then LMUP items 2, 3, 4, and 5 are together. Next are two happiness questions, followed by item 6 (pre-conceptual preparations). Item 1 (contraception) comes much later. Notably, it is the two behaviour questions that are split from the other four questions (which subsequently comprise the authors' recommended 4-item measure). The mixing of LMUP items with other questions about pregnancy preferences means there were likely a host of framing effects, undermining the use of these questions in construct validity tests of the LMUP. It would have been preferable to keep these questions separate from the LMUP items in the questionnaire to minimise framing effects, ideally randomising the question/measure order.

Despite an acceptable alpha and, as far as we can tell, unidimensionality, the authors recommend dropping the two behavioural items. This means that one of the three domains of the conceptual model (behaviour) is lost, leaving only items representing the "stance" and "context" domains, a major negation of content validity. A more homogenous set of items will also artificially inflate reliability, as demonstrated in the authors' findings.

The authors state that these behavioural items (1 and 6) are not appropriate in resource poor settings, yet they do not consider the existing, contradictory evidence e.g. the good performance of item 6 in a different Amharic translation [4] and the excellent performance of the LMUP in other low income countries including Malawi and Mozambique [5].

In conclusion, we believe that the authors' recommendation of a 4-item LMUP is not based on sufficiently sound psychometric evaluation. We would welcome the authors reaching out to the existing community of LMUP developers and researchers in efforts to improve measurement.

Declarations of interest:

none

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Declaration of Competing Interest

- The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.
- The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: