Author’s response to reviews

Title: Adaptation and Psychometric Evaluation of the Breastfeeding Self-Efficacy Scale to Assess Exclusive Breastfeeding

Authors:
Godfred Boateng (godfred.boateng@northwestern.edu)
Stephanie Martin (stephaniemartin@unc.edu)
Emily Tuthill (emily.tuthill@ucsf.edu)
Shalean Collins (shalean.collins@northwestern.edu)
Cindy-Lee Dennis (cindylee.dennis@utoronto.ca)
Barnabas Natamba (bknatamba@gmail.com)
Sera L. Young (sera.young@northwestern.edu)

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Author’s response to reviews:

Response letter to reviewers-- please note that a nicely-formatted version of this has been uploaded as supplementary material.

Dear Editor,

Thank you for the opportunity to submit a revised manuscript in which we address the reviewers’ very useful comments. We have made a number of changes to the manuscript; a “tracked version” has been uploaded as well as a clean version. We believe the manuscript has improved as a result of these useful comments. Please see below our responses to each comment in italics.

Additionally, we have made two other edits. We have modified the name of the scale to indicate its lineage stemming from the Breastfeeding Self-Efficacy Scale – it is now called the Breastfeeding Self-Efficacy Scale to Measure Exclusive Breastfeeding (BSES-EBF). Further, we have removed the phrasing of the BSES-EBF items that are identical to those included in the original BSES at the request of Dr. Dennis, who would like to retain control over their use.
Technical Comments:

1. Title Page - We have noted that the email address of author Barnabas K. Natamba, provided on the title page, differs to the one on file in the editorial manager system. Please ensure that the email addresses of all authors and their details match in the manuscript file and in the editorial manager system.

Response: Barnabas Natamba bknatamba@gmail.com should be used throughout. We have revised for consistency throughout.

2. Abbreviations - Please list all abbreviations used in your manuscript under the heading "Abbreviations" after the conclusions section. If no abbreviations are used in the manuscript, please state "Not applicable" in this section.

Response: All abbreviations used in the manuscript now come after the Conclusions section at the end of the manuscript.

3. Figure Legend - Please put the Figure legend section after the References section.

Response: The figure legend section now comes after the references section.

Editor Comments: We note that your manuscript presents a very high level of text overlap with your previous publication (https://urldefense.proofpoint.com/v2/url?u=https-3A__onlinelibrary.wiley.com_doi_abs_10.1111_mcn.12579&d=DwIGaQ&c=yHIS04Hhraes5BQ9reu5zKhEr7tNXt_d012z2PA6ws&r=s7dUTPTapOslnCH82q1WHJUUXSa0J-VaUSWUYBz4Jnc&m=4ljyhSI64dAMU8b0lj4nNqVx-SollAx_rO6QRGsQLLg&s=Cm4MV0B4eOMoojrjRVUVBprxrsXQTfucMIC9AOeC3eQ&e=). The overlap is found mainly in the Methods, but also Results and discussion. We appreciate that the two studies are based on the same dataset and you may wish to express similar ideas however, this level of overlap is not acceptable and must be reduced or, wherever this is not possible such as in the Methods, the source should be clearly quoted and cited. If any of the data in the manuscript have been presented before, this should also be made very clear in the manuscript and the source cited and discussed.

Response: We have revised the methods section to ensure it is distinct and appropriately referenced by making the following modifications in the methods, results and discussion.
sections: 1) we have rewritten all areas that closely overlapped with our previously published MS, 2) we have added additional citations and 3) we have added a statement clearly indicating these data have been presented elsewhere and to refer to the published manuscripts for additional detail.

Reviewer: 1

Sonia Semenic (Reviewer 1): Thank for this very well-written, comprehensive description of the development and psychometric testing of the an adapted version of Dennis' Breastfeeding Self-efficacy scale for exclusive breastfeeding. I have only a few minor comments for the authors to correct or address in the manuscript prior to publication:

Dr. Semenic, we are very grateful for your thorough and thoughtful review.

1) You may want to update your reference for the global rate of exclusive breastfeeding on line 93. The most recent data from the WHO's GLOBAL BREASTFEEDING SCORECARD, 2017 - Tracking Progress for Breastfeeding Policies and Programmes states: "The overall rate of exclusive breastfeeding for infants under six months of age is 40%. Only 23 countries have achieved at least 60% of infants less than six months being exclusively breastfed" (p. 8).

Response: Thank you. We have updated our references for the global rate of exclusive breastfeeding. See text on page 3: Only 40% of infants younger than 6 months worldwide are exclusively breastfed [2, 9].

2) P. 4, Line 124 - remove the "and" before point 4.

Response: Thank you. We edited the text to remove the ‘and’. 3)

P. 14, line 347 - You report the Cronbach's alphas for the EBFSS score and cite Table 1, but these numbers are not in the table - perhaps you can add a column for these?

Response: Thank you for this comment. We have removed the reference to Table 1. 4)

P. 15, lines 360-364 - the reporting of the findings is a little confusing here, as the reported finding don't match up precisely with the data in Table 2. For example, from the table, the mean
range for the items is 3.09-3.73, not 3.1 to 3.8 (3.73 rounds down to 3.7). Perhaps report the mean range of the items and the medians in separate sentences, as the statement "except for challenging task and BF every feeding" on line 361 appears to be referring to their median.

Response: Thank you for catching this. We have edited the text and Table 2 to harmonize our reported numbers. See text, Pg. 15: Our criteria for item reduction and functionality resulted in the deletion of 8 of the 19 items. All eight items had less than 0.2 inter-item correlations with at least 5 of the 19 items. Five out of the 8 items deleted had item-total correlations and adjusted item-total correlations of < 0.3 (Additional file 1: Table S1). A re-estimation of the 11 remaining items produced inter-item correlation coefficients ranging from 0.11 to 0.86 (Table 2). The mean for item-total correlations for all 11 items was 0.63, with a range of 0.40 to 0.79. The mean for adjusted item-total correlations was 0.52, with a range of 0.28 to 0.72 (Table 2). The median for all 11 items was 4.0, except for “challenging task” and “BF Every feeding”, and a mean range of 3.09 to 3.73 (Fig 1, Table 2). Items indicating greater confidence included “Enough milk”, “Deal BF”, and “Stop Other foods”. Items where respondents indicated lower confidence included “EBF Liquid” and “EBF milk” (Fig 1, Table 2).

5) P. 18, Line 379 and Table 3 - the text states that 2 items were dropped because of factor loadings lower < .30 (Challenging task and Manage F) - please indicate if you were you referring to lower factor loadings in the one-factor or two factor model here. For example, "challenging tasks" had a factor loading of .39 in the one-factor model - does that mean you were referring to a cut-off of .30 for the TWO-factor model? if so, its not clear then why Enough Milk was retained with a two-factor loading of .29? Is this a typo?

Response: Thank you for drawing our attention to this typo. We have revised Table 3 and the text accordingly: Enough Milk in Table 3 now shows loadings of 0.30 in the two-factor model.

Pg. 18: With the re-examination of factor loadings, one item – ‘Challenging task’ – with a lower factor loading (<0.30) and a second item ‘Manage BF’ with a lower (<0.30) and a non-significant factor loading were dropped from the list of items in the two-factor model (Table 3). In all, a total of 10 items were dropped, seven from the original items adapted and three from the newly added items. 6)

Table 5 - Can you clarify whether the questionnaire, when administered, indicated whether some of the statements only refer to the first six 6 months of life? For example, the items EBF milk, Continue EBF and EBF liquid only pertain to the first 6 months, beyond which infants should be receiving additional nutrients. Is it possible that participants scored lower on these items in
recognition that beyond 6 months they would need to give their infants more than just breastmilk? Or were they aware when responding that these items only referred to the first 6 months of breastfeeding?

Response: The wording asked about their current practices at the time of the survey which was at 1 and 3 months postpartum, such that we don’t think this was the case.

7) P. 22. Line 435 - The statement "These values were consistently above the published satisfactory (0.70) and preferred (0.80) thresholds for scale reliability" is not accurate as the 3-month Cronbach alphas reported in Table 6 are both below .80 (ie, .7677 and .7903)

Response: Thank you. As the Cronbach alphas were not all above 0.80, we have revised our text to state that our results meet the satisfactory threshold level: see Pg. 22-23. Reliability for the two subscales was measured using Cronbach’s alpha and test-retest correlation at 1 and 3 months postpartum. The reliability test for the two subscales, Cognitive and Functional, produced respective Cronbach’s alpha of 0.82 and 0.77 at month 1, and 0.85 and 0.79 at month 3 (Table 6). These values were consistently above the published satisfactory (0.70) thresholds for scale reliability [59,61]. All corrected item-total correlations were positive and ranged between 0.28 and 70.

Results in general - although it may be beyond the scope of this paper, it would have been interesting to know whether HIV+ women scored differently on the items (could this have been done as another test of know group comparison? Ie, is there theoretical reason to predict that HIV+ mothers would have lower EBFSS scores, due to their compromised health status?)

Response: Thank you for this comment. It is indeed beyond the scope of this paper to assess the performance of HIV+ women compared to HIV- women on the EBFSS-SF scores. However, we are happy to share with you that in the analyses we did, there were no significant differences between the two groups on the EBFSE Scale scores.

P. 24, Line 521 - please add that the scale can assess PERCEIVED capacity to exclusively breastfeed, as the scale measure perceptions of BSE, not actual behaviors

Response: Thank you. We have added ‘perceived’ to the now rephrased sentence on page 27.
P. 26 - Lies 527-529 - This sentence needs some clarification - its not clear how the scale can be used to "assess programs and enhance the development of policy initiatives aimed at increasing exclusive breastfeeding" - may need to specify that the scale and be administered to participants of during the evaluation or programs and policy initiatives aimed at increasing exclusive breastfeeding...

Response: Thank you for this insightful comment. The sentence has been revised on pages 26-27 to include administration of the scale.  P. 26 Line 543 - its not clear to me why this scale would be specific to women "where breastfeeding is common but rates of exclusive breastfeeding are low" - I think this scale may have applications to all breastfeeding populations!

Response: Thank you for this comment; we really appreciate your enthusiasm. We agree that the scale could be applicable to all breastfeeding populations, and have revised the sentence as follows: “It will be of particular use in any setting where breastfeeding is a widely practiced cultural norm but exclusive breastfeeding is not common.”

Reviewer 2 (Reviewer 2): PEER REVIEWER COMMENTS: To view the full report from the academic peer reviewer, please see the attached file.

We have added the comments in the attached file to this document.  REVIEWER COMMENTS FROM REPORT: What is your overall impression of the study?  This study aims to assess exclusive breastfeeding self-efficacy by adapting and validating an instrument. Exclusive breastfeeding is important for early infant nutrition; so development of reliable and valid measurement is welcome. The authors have written the article well, explaining every detail of the methods, with comprehensive results. Overall, this manuscript should be published with some minor revisions and clarification.  * What have the authors have done well? Authors have provided good background and rationale. Authors have performed face validity, factor analysis and construct validity to modify and develop the scale. The results address the objectives and have been presented clearly, with balanced discussions and limitations. In what ways does it not meet best practice?  I have pointed out some revisions/clarification. There is not any strong ways that the article does not meet best practice.

Response: Thank you so much for the careful read of our manuscript and a thoughtful review.

ADDITIONAL REQUESTS/SUGGESTIONS:  Some minor comments/clarification (see below)  
Abstract: Method: Line 58: Who are the experts; if authors, replace by 'We'
Response: Page 2. The phrase describing the experts has been changed to “We”

Line 60: What is NCT02925429?
Response: This is the clinical trials number. We have clarified the meaning of this number in the final lines of the abstract, and we have removed the redundancy.

Line 77: Since this study was performed in Uganda setting, the adaptation can only be to similar context, not elsewhere. Please modify it.
Response: Thank you for this comment. We have now modified the conclusion to the following:
Respectfully, we disagree with this point. Adaptation may be needed, but we think the scale is in a state where it could be adapted to and validated for many other disparate settings where breastfeeding, but not exclusive breastfeeding, is common, e.g. India.

Background: Line 92: exclusive breastfeeding rate remain.....
Response: We have modified the rates to indicate “exclusive breastfeeding rates remain” on page 3e.

Line 107-108: Please explain more where (for which population) the BSES-SF scale were developed and intended.
Response: Thank you for this comment; this is a good idea. We have noted that the BSES-SF was developed for measuring breastfeeding self-efficacy among Canadian mothers on page 4.

Line 118-135: This paragraph is more relevant to methods section.
Response: Thank you for this comment. This paragraph describes the background on self-efficacy theory by Bandura and subsequent theory on breastfeeding self-efficacy. It focuses on how Dr. Dennis conceptualized and developed the BFSE-SF to account for these theoretical underpinnings. We then describe the gap in the BFSE-SF scale to evaluate exclusive breastfeeding and specifically among those women living in low-resource settings. Given this description is theoretical and descriptive of previous work, we believe this section is an appropriate fit for the background section.
Line 152-154: What is the mode of data collection? Please explain.

Response: Thank you for this important suggestion; to shorten the paper, we skipped describing the mode of data collection in this paper as we indicated that study procedures have been described elsewhere.

Also, exclusive breastfeeding should last up to 6 months; what is the reason behind excluding data from 6 months?

Response: Thank you, we have modified the statement and reported that data on breastfeeding self-efficacy were collected at just two time points (1 and 3 months) at page 5.

Methods: Line 159-160: what are the items added and modified; and how did the authors arrived to this?

Response: Thank you drawing our attention to this oversight. We have now referred to supplementary table (Table S1), which outlines the questions that were adapted, the questions that were modified, and the newly added questions. We also note that these changes were made based on a review of the literature on exclusive breastfeeding and local knowledge of breastfeeding practices, and include 2 sentences about it on page 7.

After doing this, how many items were there? Please explain. Is their agreement among four experts on the addition and modification?

Response: Thank you. We clarified the text and included the total number of items as well as providing an explanation on the additions and modifications made to the items on page 7.

Line 179-185: Did the breastfeeding characteristics and measurement differ to the self-efficacy measurement tool? If so, what?

Response: Thank you for your comment. The breastfeeding characteristics were used to validate the self-efficacy measurement tool. This is described as predictive, convergent and discriminant validity in the methods section.
Descriptive analysis: Line 193-194: Usually, socio-demographic characteristics of sample is included; but why extra (health and breastfeeding behavior variables were included whereas there is not mention in the objectives?)

Response: Thank you. The data on health and breastfeeding behavior were added to facilitate the psychometric validation or testing of the scale. This is indicated in objective 2 and has been revised for clarity on page 4.

Line: 195-297: I think authors should shorten description of these methods to make them more concise.

Response: Thank you. We have reduced the length.

Results It is good to start the results with participant characteristics. I think the scale adaptation (line 300-313) is more suited to methods.

Response: Thank you for your comments. We have reorganized the methods section such that the results on scale adaptation has been placed in the methods, page 7.

In Table 1, the breastfeeding characteristics variables are not readily understood; are they from a scale? Besides the sub-heading is about participant characteristics. Also, Exclusive BF Self-Efficacy Scores; is it different from BSES-SF?

Response: Thank you. We have clarified Table 1 to clearly show the variables used to describe breastfeeding characteristics. We also clarified the text to indicate that breastfeeding characteristics were determined, in part, by a validated scale that assessed three dimensions of social support: instrumental, emotional, and informational.

Pg. 15: We assessed breastfeeding characteristics using the Exclusive Breastfeeding Social Support (EBFSS) scale which consists of three breastfeeding dimensions: Instrumental, Informational and Emotional dimensions [30].

To your second point: Yes, the first, captures breastfeeding self-efficacy, the second to exclusive breastfeeding self-efficacy.

Line 352-357: It is good to know which items were deleted? Were they those who were added or modified?
Response: Thank you for this comment. We have been as transparent as possible about which items were added and which were deleted. In the text we have stated the number of items in the finalized version, and of the 10 that were dropped where they items had originated from (i.e. newly generated or adapted) at page 18. Further, the deleted items are indicated by strikethrough in the supplementary material- table 1.

Line 389: Heading of Table 4 is not in the appropriate place.
Response: Thank you, Table 4 Heading has been revised.

Overall the results should be made concise without describing or commenting the findings, which should be done in discussions.
Response: Thank you for this comment. We have completed extensive revisions to organize the methods and results such that they provide a clear presentation of our scale adaptation process and then our validation process with subsequent results.

Discussions: Line 477-483: Please also comment upon how the final 9-item EBFSES-SF is different from BFSE-SF in construct and relevancy to measure exclusive breastfeeding. What is the advantage of reducing the original scale?
Response: Thank you. We have added a paragraph showing the difference between the 9-item scale and the original BFSE-SF on page 25. It reads as a bit redundant, but if it helps with clarity, we are happy to have it in.

I don't understand why some items in Figure 1 were crossed; similarly also in other supplementary tables.
Response: Thank you for this comment. We indicate as footnotes in the supplementary tables and in Figure 1 that items with strikethrough were those that were not part of the final Scale.