Author’s response to reviews

Title: College students’ interpretations of food security questions: Results from cognitive interviews

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Ms. Ref. No.: PUBH-D-19-01138 – Revision 1, College students’ interpretations of food security questions: Results from cognitive interviews

The authors are grateful to the Reviewers for their evaluation of the manuscript. We have carefully considered the comments provided by each reviewer and have made modifications to the paper based on these suggestions. We believe that this has resulted in a stronger manuscript and hope that the Reviewers will agree. All revisions have been highlighted in-text and outlined in the responses below. Thank you for your consideration.

Martin Caraher (Reviewer 1):

1. This is an interesting paper and the findings are certainly interesting but the paper needs some redrafting and explanation before being suitable for publication.

Author comments: Thank for your positive appraisal of the manuscript. The authors appreciate the time invested to provide your below suggestions.

2. Write for an international audience and explain US terms and institutions eg land-grant university

Author comments: The authors appreciate this recommendation and have removed US-specific terms that are not integral to the research objective and discussion in the manuscript. Per the
example given, the term “land-grant” has been replaced with “4-year” in the abstract (line 29, page 2).

3. There remains a question as to why it is important to look at university students, it might be argued that this is a phase and the FI scale is picking up temporary issues about lack of access to food which are not per se FI but about structure and social capital issues? Most university students will go onto earn higher than average incomes and the restrictions on food during university may be about structure and social determinants. Explain land-grant universities and their student make-up are they comparable to other universities in the US, might you expect a higher level of students from FI backgrounds?

Author comments: Thank you for posing these questions. The authors agree that the argument could be made that the FSSMs are potentially identifying other issues of emerging adulthood or college enrollment that may be something other than FI. However, it is also clear to the investigators that several interviewees in the current study experienced FI, based on the extreme coping mechanisms they were using due to their financial circumstances. As there is national attention on this issue with widespread efforts to address student FI in the U.S., the current analysis focuses on detailing the issues that students had with interpreting the FSSMs, in hopes that this will spur work to develop questionnaires that will distinguish between college student/emerging adulthood issues and true FI. This has been clarified in the Discussion (Page 28, line 617-618). Additional details about the university context and student make-up have been added to the Results section (page 10, lines 204-207) and Discussion section (page 32, lines 706-711).

4. To what extent is food provisioning influenced by a lack of skills and knowledge as opposed to structural determinants. I remember one study looking at the lack of food availability on campus? Do deadlines and university requirements push students to being FI?

Author comments: The authors appreciate this consideration. To provide considerations of the environmental/structural influences of the current sample, additional attributes of the university where students are enrolled has been added to the Discussion section (page 32-33, lines 711-716). Further, the environmental and structural factors that are not captured in the FSSM have been added to the discussion (pages 30-31, lines 660-677).

5. How much of this is related to the move from home where food would have been provided and in some instances prepared by others, so are we measuring a lack of coping??
Author comments: This is a great question. The authors hope that a modified questionnaire can
distinguish between FI and issues of emerging adulthood and/or coping to college enrollment – a
point we make in the Discussion (Page 28, lines 617-618).

6. The FI scale as originally devised was, as you say, with mothers and for household use
here we are taking about an instrument being used for individual responses to FI. In the sample
were there any who were responsible or assuming responsibility for households?

Author comments: Thank you for this question. Whether participants assumed a head of
household role was not evaluated in the current study. However, it is an interesting question. The
10-item FSSM shown in Table 1 is based on the original 18-item household-level instrument and
the USDA has suggested language for converting the household-level language (we/us) to
individual-level items (I/you) that reflect an individual’s experiences with FI. Our data are not
able to suggest whether individuals interpret and respond to these individual-level items
differently dependent on their role in the household, but it would be an interesting assessment for
future research.

7. We need to know the methods for random selection/how many were planned to be
recruited to the interviews. I assume if was 34 from each group, but this is not clear.

Author comments: The authors have added clarifications to the randomization procedures (page
6, lines 130-131) and recruitment goals in the methods section (page 8, line 157).

8. How was the judgement reached with respect to data saturation in the FS groups? [see
Morse Qualitative Health Research2015, Vol. 25(5) 587-588].

Author comments: Thank you for this question. The investigators experienced what Morse notes
in their editorial “I know when students have reached saturation—they stop talking about
individual cases, and, when describing their study, speak in generalities.” Saturation was
identified by comparing the responses of FS students with the primary research question (“How
do students interpret the USDA FSSM questionnaire items?”). The investigators noted
redundancies in responses to the probing questions, such that there was one common answering
approach among the FS group. This interpretation and evaluation of saturation has been added to
the Methods section (page 8, lines 159-164).
9. The section on analysis page 9, needs attention why do open coding, what are formal definitions? Open coding means you do not have to agree on categories/themes, I am confused by the approach. What are ‘unclear quotes’?

Author comments: Thank you. The authors have updated the analyses section in the Methods section (pages 9-10, lines 179-192) to reflect the three phases of the coding process (the first was open and the second two were selective) as well as clarify what was meant by ‘unclear quotes’.

10. The social demographics of the participants seem untypical, can you comment. In terms of the half living off campus are there any more details on the household type, food storage, cooking facilities etc.

Author comments: Thank you for this suggestion. Though the questionnaire did not ascertain these additional food storage or preparation capabilities of off-campus housing, the authors can provide additional details about the on-campus living facilities to contrast with the expectations of off-campus housing. These details have been added to the results section, on pages 10-11, lines 208-218.

11. The findings section is strong with many insights but some of the above information requested will help the reader with context.

Author comments: Thank you for your positive comments on the results section. The authors agree that the modifications to the methods have resulted in a clearer procedure for readers.

12. I am always confused over questions about balanced meals? What does this mean, and it is the respondent's perception or understanding of what is balanced? Can I afford and did I are two different issues? This then follows on to the next question over was it balanced??

Author comments: Thank you. The authors completely agree, and this may be why this particular item has been a topic of query in the past for other sub-populations (discussed in lines 628-644). The authors argue that using the term “balanced meal” may not be appropriate to assess undernutrition. The students had conceptualizations of “balanced meals” but had trouble separating affordability from action (lines 305-309 and 327-330). This has been highlighted in the additional Table 3 as well as added to the Discussion section on the topic (pages 29-30, lines 645-647).

13. The findings might benefit from more direct comparison to the FS group responses.
Author comments: Thank you for this recommendation. Per Reviewer #2’s comment #4, the authors have pared down the extraneous information in the results. We have also added a table to highlight the key results and this has allowed the relocation of several student quotes. Due to this, the comparisons of the FS and FI are a more prominent component of the results text.

Seth Berkowitz (Reviewer 2):

1. I think this is a well-written paper on an important topic—trying to explain the high (perhaps higher than expected) rates of food insecurity in college students. Strengths of paper include the high of very high quality and intensive data collection techniques (particularly the cognitive interviewing component) and high-quality qualitative data analysis methods.

Author comments: Thank you for your positive remarks and the summary of the study’s strengths.

2. The main limitations are the somewhat nominally small sample size (though saturation was obtained so the size was likely adequate), and the use of a single site for data collection. Given the intensive data collection undertaken here, both of those limitations were likely logistical and quite understandable. The authors are appropriately circumspect about these limitations, and I think on balance the novelty of this research substantially outweighs the limitations.

Author comments: The authors agree that these are two limitations that readers need to consider when interpreting this work. Both limitations are addressed in the relevant section of the Discussion, but the discussion of the single site limitation has been expanded in light of Reviewer #1’s Comment #3 and #10. Specifically, lines 706-711 (Discussion section, page 32) describe the unique attributes of this site and why generalizability to other sites, and their respective student populations, is cautioned.

3. I have two small suggestions for the authors to consider.

Author comments: Thank you for these recommendations. Each suggestion was considered and separately addressed.

4. The presentation of the results is quite comprehensive. While all of these findings are important to relay, the length of the results section makes it somewhat difficult to home in on key
insights. I wonder if the authors could condense the results section to highlight key findings, and present additional findings in an appendix?

Author comments: The authors appreciate this suggestion. The entire Results section was reviewed and revised to minimize extraneous or repeated information. In addition, to better highlight the key findings, Table 3 has been added as a quick reference and has allowed for some in-text participant quotes to be relocated.

5. Secondly, given the authors immersion in this topic, I think the discussion section would benefit from more of the authors insight regarding what might need to be changed in an adapted version of a food insecurity assessment tool for college students. The authors appropriately point out the benefits and drawbacks of making such an adjustment, but I think it would help crystalize some of the findings if the authors were more explicit (even if they want to acknowledge that they are speculating) as to what alternations would be needed for a college student specific module.

Author comments: Thank you for this suggestion. The authors have listed some example minor modifications that could be tested in lines 686-689 on page 31.