"Get Going" and "Effort": Improving the Wording of CES-D Items Commonly Misinterpreted by University Students?

Introduction

Background
The Center for Epidemiological Studies Depression Scale (CES-D, Radloff, 1977) is a commonly used 20-item questionnaire (Carleton et al., 2013) in studies of well-being. On the CES-D,

- item number seven ("I felt that everything I did was an effort") and
- item number twenty ("I could not get going")

are meant to express similar sentiments.

Previous research in our lab (Hindy, Fouldi, et al, WPA 2018) found that item seven is often misinterpreted by students, especially those of Asian background. Many of these students understand "effort" in a positive way in the context of this item and, in this case, the item is no longer measuring what it is intended to measure (i.e. depressive symptomology).

In an attempt to find alternative phrasing that will not be open to multiple interpretations, the current study presented participants (N = 70) with the original full CES-D, and new versions of items seven and twenty. The current paper examines these alternatives using qualitative and quantitative methods as appropriate.

Foundation Replication Question

In a new sample of undergraduate students, do we replicate the findings (from Hindy et al., WPA 2018) regarding the misinterpretation of item seven by a substantial non-zero proportion of respondents?

Research Questions regarding original and alternative wording

RQ1a. What wordings do participants prefer?

RQ1b. Are the perceived valences of the reworded items?

RQ1c. What do respondents say about reasons for why they like/dislike the original item, and alternative items?

RQ2. Item statistics
Overall and as a function of perceived valence and/or preference, RQ2a. What are the distributional forms of item responses?

RQ2b. Do alternate items improve reliability estimates of scores?

Participants and Procedures

Participants (undergraduate students) completed the CES-D and provided response process information through a think-aloud protocol and a post-questionnaire completion interview.

Focal Measure. The CES-D is a 20 item measure of symptoms of depression over the past week. Item-level response options are on a 4-point scale (0...3). High scores indicate greater depressive symptomology. Item-level responses for the two original items (items 7 & 20) and alternative items are considered.

Alternative items. Candidate alternative forms of the target original items were developed in consultation by a set of research assistants.

In post-questionnaire interviews, participants
- ranked the versions of the items in order of preference,
- indicated whether they interpreted “effort” as positive or negative for each version of item seven, and
- chose which versions of items seven and twenty are the most similar to each other.

Replication of Hindy, Fouldi, et al.

Context from Hindy et al WPA 2018.

A nonzero proportion of respondents misinterpreted “effort” in Hindy et al. 2018. Additionally, correlations of item 7 with item 20 were statistically significantly different for those who interpreted “effort” as positive vs. negative: standard Fisher-transform based analyses to compare independent correlations show that the correlation between responses on items 7 and 20 is statistically lower in the Pos (n = 38) vs Neg (n = 17) groups (r: Pos = 0.001 vs Neg = 0.538, z = -1.90, p, two-tailed = 0.029) (WPA, 2018).

In the current study, this directional hypothesis was replicated: the correlation between responses on items 7 and 20 is statistically lower in the Pos (n = 22) vs Neg (n = 45) groups (r: Pos = -0.329 vs Neg = 0.34, z = -2.52, p, two-tailed = 0.006).

Respondent Reactions: Exemplar Quotes

RQ1c. The following provides example quotes from post-questionnaire interviews regarding participants’ most and least preferred item versions.

Original version Item 7

P1: “My least preferred was ‘I felt that everything I did was an effort’. I just think it’s a bit unclear what ‘effort’ means exactly, because it could be taken in a negative sense, like taking too much effort, or it could kind of be seen in a positive way as you did something that kind of push yourself, so I think it’s just ambiguous in what it’s asking.”
P2: “I felt that everything I did was an effort”, I put it as #1, I think it’s quite easy to understand when you are trying really hard, you know that you tried really hard and it’s easy to identify what you tried hard in what you didn’t try so hard in, so that’s pretty easy question to understand and pretty clear.”

Original version Item 20

P3: “I could not get going” was a bit unclear in what it meant. It can be taken as either at the beginning of the day or for individuals’ actions throughout the day.”
P4: “Ok so ‘I could not get going’ was my least preferred because I didn’t really understand what ‘get going’ means. Yeah.”

Top-ranked alternative version of Item 7

P5: “I felt that everything I did took more effort than usual”, I put it as #1 because it’s like – also easy, to compare, like you word it like ‘more effort than usual’, you think back ‘oh this was harder than other’, so it’s easy to like, just compare it to how you feel other time.”

Top-ranked alternative version of Item 20

P6: “So my most preferred was ‘I felt unmotivated’, I felt like that would be my top choice because it’s kind of open-ended, it’s not really directed at a certain thing you had to do that day, but in general.”

Results – RQ set 1. Respondent Reactions

RQ1a. Participants ranked the entire set of item alternatives (including the original) from 1 (most preferred) to 5 (least preferred).

RQ1b. Below are the results of the rankings with 95% confidence intervals (effort items grouped by interpretation of “effort” in original item), and a graph illustrating the proportion of participants who interpreted effort as positive for each version of item 7. (RQ1b)

#7: “Effort” items

1. I felt that everything I did was an effort.
2. I felt that everything I did required too much effort.
3. I felt that everything I did took more effort than usual.
4. I felt most daily tasks required effort.
5. I was not motivated to start daily tasks.

#20: “Get Going” items

1. I could not get going. (original)
2. I felt unmotivated.
3. I lacked energy for daily tasks.
4. I found it difficult to start daily tasks.
5. I was not motivated to start daily tasks.

Results – RQ set 2. Item Statistics

RQ2a. Item distributions are generally positively skewed. When effort is interpreted positively, the direction of skew reverses.

RQ2b. Replacing the original versions of items 7 and 20 with the highest ranked alternatives did not improve full scale reliability, which remained stable around alpha = .81, 95% CI[.75, .87]. While it did improve reliability for the relevant subscale (Radloff, 1991), confidence intervals overlap substantially; with original: alpha = .36, 95% CI[.13, .59]; with alternatives: alpha = .46, 95% CI [.26, .66].

Conclusion

This paper examined alternative versions of two CES-D items. Alternative versions of both items were generally preferred over original wording, with some differences depending on participant interpretation of "effort". Interviews indicate that some participants misinterpreted the original items or found them confusing. However, replacing items with alternative versions did not clearly improve the reliability of scores based on this measure.