

# Pilot testing a web-based survey to assess parental health literacy, empowerment and advocacy in the context of food allergy management in schools

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## Background

Health literacy is composed of functional, communicative, and critical health literacy skills.<sup>1</sup>

Critical health literacy is conceptually close, yet distinct, from empowerment and advocacy.

Pilot-testing a survey for context and target population is crucial for quality data measurement.

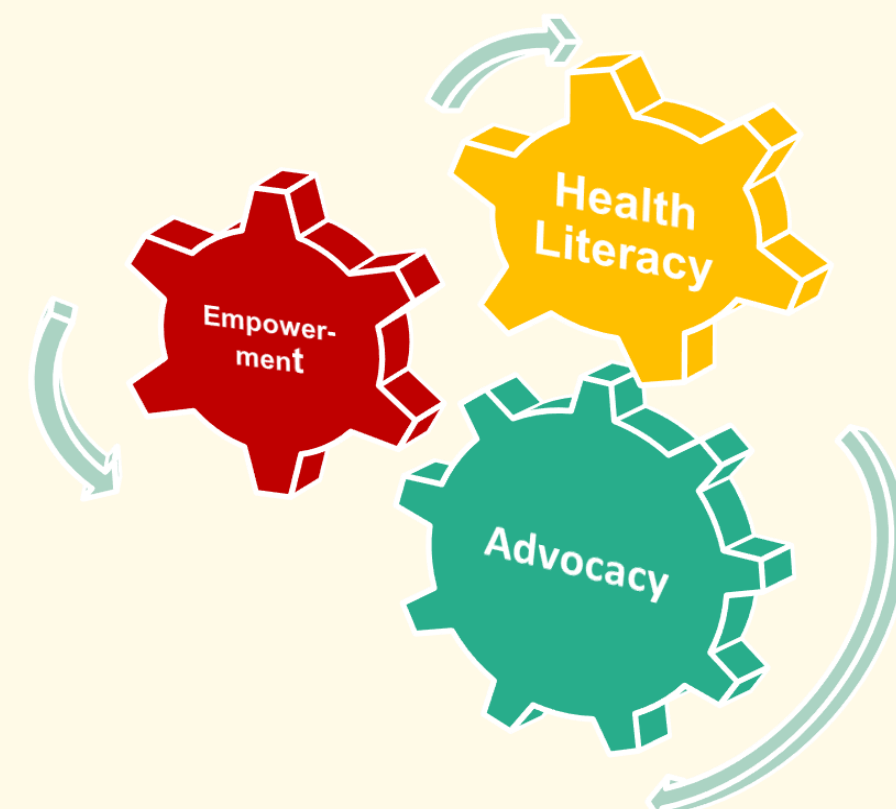


Fig. 1 Health literacy, empowerment, and advocacy may be important for managing chronic conditions, such as food allergies.

## Goal

The purpose of this pilot study was to examine the feasibility, reliability and preliminary validity of a web-based survey with measures of health literacy, empowerment and advocacy adapted to the context of food allergies management in schools.

## Methods

### Measures

- Health literacy: adapted from the Functional, Communicative, and Critical Health Literacy Scale<sup>2</sup>
- Empowerment: adapted from the Health Empowerment Scale<sup>3</sup>
- Advocacy: created and adapted from the literature<sup>4</sup>
- Four open-ended essay items

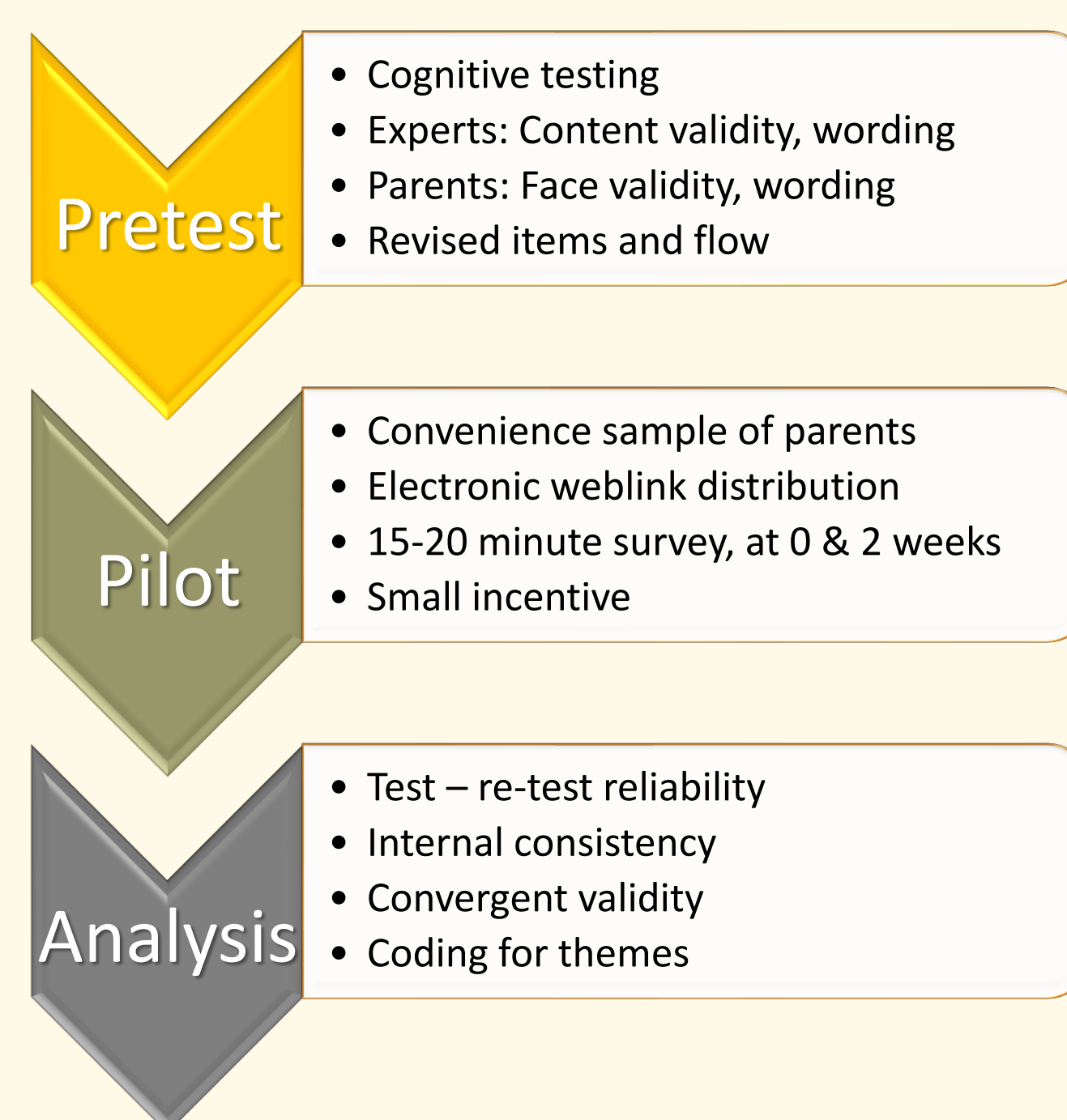


Fig. 2. Methods. Cognitive pre-testing, pilot-testing and analysis of pilot data led to revision of measures

## Results

Participants were predominantly white, college-educated mothers (N=33, week 0; N=25, week 2).

Median response time was 20 minutes during May 2020. More than 85% of respondents substantially answered all four essay items after multiple choice items.

Good test-retest reliability was found for all health literacy items, most advocacy items, and less than half of empowerment items.

Table. Characteristics of scales and revised scales in pilot testing (n = 33)

Scale	Cronbach's alpha	Items with good test-re-test reliability (N=25)
Health Literacy	.95	12/12
Empowerment	.89	5/12
Revised Empowerment	.83	5/5
Child Advocacy	.90	9/10
Revised Child Advocacy	.88	9/9

Scales were revised to exclude items with poor test-retest reliability.

Cronbach's alpha ranged from .83 to .95 for all revised scales.

Interquartile ranges were narrow and skewed in major variables, but ceiling effects were not detected according to pre-set criteria.

The health literacy scale correlated well with eHEALS ( $r=.65, p<.001$ ).

The revised empowerment scale demonstrated good convergent validity with the attitude subscale of the Psychological Empowerment Scale<sup>5</sup> ( $r=.69, p<.001$ ).

The three advocacy subscales correlated strongly with each other ( $r>.74, p<.001$ ).

Qualitative data analysis revealed a theme of the negative emotional impact that parents experience while advocating for their child's food allergy safety at school.

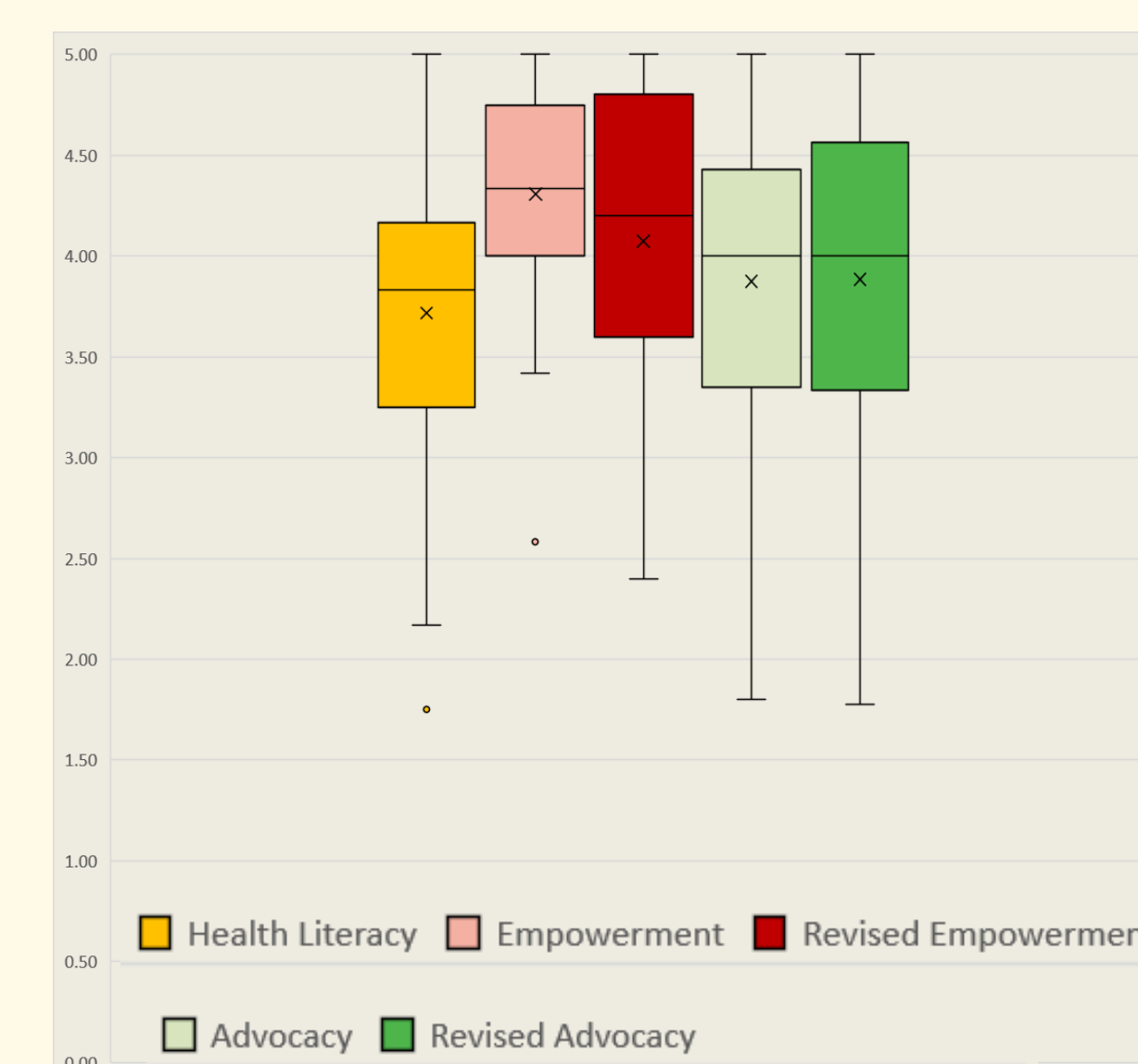


Fig. 3. Ranges, quartiles, medians, and means of major variables

## Conclusion

The health literacy and revised empowerment scales demonstrated good convergent validity.

All revised scales had good internal consistency.

The negative emotional impact on parents of advocating for food allergy safety in schools may be an important covariate to include in future studies.

Self-determination items in the empowerment scale had poor reliability probably because they were not well-suited to the context in which parents must rely on school staff instead of being self-reliant.

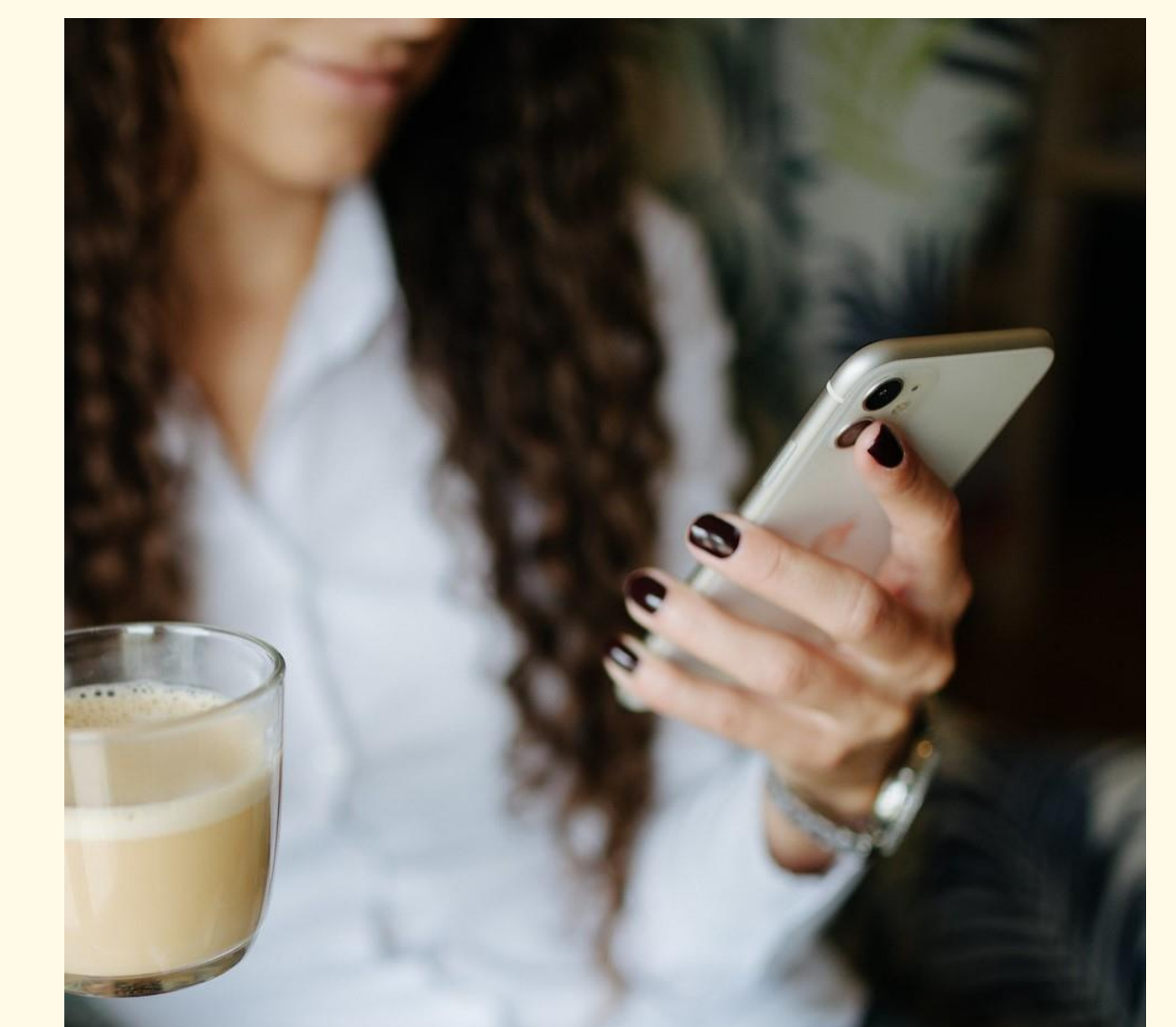


Fig. 4. Recruitment methods and survey flow showed good feasibility.

## Implications

The revised survey will be used in a larger study to examine the relationships among health literacy, empowerment and advocacy in the context of food allergies management in elementary schools.

Recruitment strategies will be expanded to increase the participant sample diversity and the variability in the main variables.

Pilot testing of context-specific recruitment methods and survey tools provided insightful revisions to improve future data collection.

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