



Psycho-Social Evaluation Measures for 8-12 year-olds in Nutrition Education Programs

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Research Question

Which validated surveys measure changes in nutrition knowledge, attitudes, behavioral intent and self-efficacy among 8-12-year-olds in nutrition education programs?

Bottom Line

Many peer-reviewed studies report on psychosocial outcomes of nutrition education programs in 8-12-year-olds using pencil and paper questionnaires. Measures of reliability and validity are reported for most studies, but vary widely in both quality and focus. Practitioners should select from the validated instruments (or select items from validated scales) that most closely match the content and desired outcomes of their programs and are feasible to administer within the program setting.

Background

Federally funded nutrition education curricula for youth require high-quality evaluation to assess effectiveness. Psycho-social outcomes (i.e. nutrition knowledge, attitudes, behavioral intent and self-efficacy) can be measured in the short term, and are associated with the desired long-term behavioral outcomes (Borgers, 2000).

Methods

The question for this Systematic Translational Review was shaped by the specific needs of an exemplar brief nutrition education program, Choose Health: Food, Fun, and Fitness (CHFFF). CHFFF uses experiential learning to teach healthy eating and active play to 8-12 year-olds, targeting behaviors that research suggests are most important for reducing the risk of childhood obesity and chronic disease (https://fnec.cornell.edu/Our_Initiatives/Youth.cfm).

While both surveys and semi-structured interviews have been used effectively to measure outcomes of nutrition interventions with youth (Borgers, 2000), practitioners identified feasibility constraints that limited this review to pencil and paper surveys that could be completed by youth participants in the program setting.

Two reviews of evaluation measures for nutrition education in children were identified by the exemplar program practitioner (Hernández-Garbanzo, 2013; Gretchen Swanson Center for Nutrition, 2011). Additional searching of library databases identified only one additional review on this topic (Contento, 2002). Together, these three articles reviewed 126 papers. After removing those published before 2000 (n=80), duplicates (n=8), measures validated in older age groups than our target (n=11), and studies or measures that were otherwise not relevant or not feasible (n=11), a final total of 16 measures were identified (Table 1).

Findings

Many peer-reviewed studies report on psychosocial outcomes of nutrition education programs in 8 to 12 year olds using scales derived from multiple items, which are answered by the child in pencil and paper questionnaires. Measures of reliability and validity for scales are reported in most studies, but the psychometric quality of the measures and of the psychometric evaluation itself vary widely. Although the psychometric quality of some measures is clearly higher than others, the range of content focus (e.g. fruit and vegetable consumption, general nutrition, beverage choice), psychosocial outcomes of interest (e.g. knowledge, self-efficacy, intent), and constraints of individual program settings preclude endorsing a single set of measures as a gold standard. Rather, we recommend that investigators use existing, previously-validated measures (or items from validated scales) when those measures match program content and are feasible to administer within the program setting.

Conclusion

All selected studies reported at least some measures of the reliability and validity of measurement tools, although there was a wide range of both measures and values of statistics reported. The field would benefit from the adoption of standard measures and reporting conventions of psychosocial outcomes to strengthen the evidence base that has been generated on this topic.

Table 1. Validated Instruments			
Name	Focus Area	Target Age	Measures
<i>Weight Gain Prevention Study</i> (Sherrill-Mittleman 2009)	Beverages	8-10 year-olds	Attitudes Self-Efficacy
<i>High 5</i> (Reynolds 2000)	Beverages Fruits/Vegetables	3 rd -5 th graders	Attitudes Knowledge Self-Efficacy
<i>Eat Well Be Active</i> (Wilson 2008)	Beverages Fruits/Vegetables	10-12-year-olds	Attitudes Knowledge
<i>Food Preferences</i> (Caine-Bish 2009)	Beverages Fruits/Vegetables	3 rd -6 th graders	Attitudes
<i>Gimme 5 Fruit, Juice, and Vegetables for Fun and Health Program</i> (Baranowski, 2000)	Food Preferences	4 th & 5 th graders	Attitudes Knowledge Self-Efficacy
<i>Fruit and Vegetable Self-Efficacy</i> (Geller 2009)	Fruits/Vegetables	4 th -6 th graders	Self-Efficacy
<i>Lunch Fruit Vegetable Consumption</i> (Thompson 2007)	Fruits/Vegetables	5 th graders	Attitudes Self-Efficacy
<i>Pro Children Project</i> (De Bourdeaudhuij 2005)	Fruits/Vegetables	10-11-year-olds	Attitudes Knowledge Self-Efficacy
<i>After School Cookery Club</i> (Anderson 2002)	Fruits/Vegetables	11-year-olds	Knowledge
<i>Fruit and Vegetable Influences</i> (Vereecken 2012)	Fruits/Vegetables	11-12-year-olds	Attitudes Self-Efficacy
<i>After-School Program for Urban Native American Youth</i> (Rinderknecht 2004)	General Nutrition	5-10-year-olds	Knowledge Self-Efficacy
<i>Pathways</i> (Stevens 1999; Stevens 2003)	General Nutrition	3 rd -5 th graders	Behavioral Intent Knowledge Self-Efficacy
<i>Catch 'Em / Catch Kids Club</i> (Kelder 2005; Penkilo 2008; Hoelscher 2003)	General Nutrition	4 th graders	Knowledge Self-Efficacy
<i>Mediating Variables of High 5</i> (Reynolds 2002)	General Nutrition	4 th graders	Attitudes Knowledge Self-Efficacy
<i>Kids Kartoan</i> (Townsend 2006)	General Nutrition	9-11-year-olds	Knowledge
<i>Whole-grain Intake Children</i> (Burgess-Champoux 2006; 2008)	Whole Grains	5 th graders	Behavioral Intent Knowledge Self-Efficacy

Bibliography

Borgers, N., De Leeuw, E., & Hox, J. (2000). Children as respondents in survey research: Cognitive development and response quality 1. *Bulletin De Méthodologie Sociologique*, 66(1), 60-75.

Contento, I., Randell, J., Basch, C. (2002). Review and analysis of evaluation measures used in nutrition education intervention research. *Journal of Nutrition Education and Behavior Journal of Nutrition Education and Behavior*, 34(1), 2-25.

Hernández-Garbanzo, Y., Brosh, J., Serrano, E. L., Cason, K. L., & Bhattarai, R. (2013). Psychosocial measures used to assess the effectiveness of school-based nutrition

education programs: Review and analysis of self-report instruments for children 8 to 12 years old. *Journal of Nutrition Education and Behavior*, 45(5), 392-403. doi:<http://dx.doi.org/10.1016/j.jneb.2013.01.007>

Pinard, C. A., Smith, T. M., Heires, P., Carlson, K., & Yaroch, A. L. (2011). Healthy living evaluation: Indicators and measures for healthy eating, physical activity and injury prevention. Gretchen Swanson Center for Nutrition for the National 4-H Council.

A full bibliography is available online at: http://www.bctr.cornell.edu/?attachment_id=3966

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