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Childhood obesity remains chronic and high in the U.S., driven by factors including poor dietary habits and lack of physical activity. Interventions that address multiple causal factors may be the most appropriate strategy to address rising childhood obesity rates. The Cooperative Extension Service offers programs across the country to address causal factors of childhood obesity, but few coordinated or concerted efforts have been made to determine overlap, reduce duplication, or identify best practices in programming. To fill this gap, the National Institute of Food and Agriculture Multistate Project W3005 Extension Workgroup sought to develop a novel tool to compare programs with components related to childhood obesity prevention. This manuscript details the iterative process used to develop the Childhood Obesity Prevention Program in Extension Rubric (COPPER), provides findings from the pilot process, and reveals the broad application and potential of this tool within Extension and nutrition education. The newly developed COPPER tool is multi-functional and may be beneficial in program development, implementation, adoption, and/or adaptation

of programs in new settings. This tool will be useful for Extension, public health, and other community organizations focused on issues central to childhood obesity targeting children, parents, and/or caregivers.

Keywords: Cooperative Extension, childhood obesity, program, evaluation, implementation, tool

Introduction

Despite efforts, childhood obesity prevalence remains high in the U.S. (Centers for Disease Control and Prevention [CDC], 2020; Imoisili et al., 2020). It is estimated that 19.3% of children and youth ages 2–19 are obese (CDC, 2021), with several populations impacted to a more severe degree than others, such as minority groups and those with lower socioeconomic status (CDC, 2021). While it is established that poor dietary habits and lack of physical activity set early in childhood are contributing to the higher percentages of obesity experienced in adulthood (Koyama et al., 2014; Péneau et al., 2016), childhood obesity is recognized as a chronic condition arising from multiple factors (Verjans-Janssen et al., 2018). Integrated approaches seem to be the most appropriate strategy to prevent or reduce complex conditions like childhood obesity, allowing interventions to target causal factors at multiple levels at one time.

Many programs within the Cooperative Extension Service (Extension) that target childhood obesity focus on nutrition, physical activity, and/or child-caregiver relationships, which have all been identified as integral components for preventing childhood obesity (Gori et al., 2017; Oosterhoff et al., 2016; Tomayko et al., 2021; Verjans-Janssen et al., 2018; White et al., 2019). Many young children develop habits that lead to early obesity because they lack an environment that promotes and supports physical activity leading children to gravitate to more sedentary activities that reduce movement (Perpich et al., 2011). Further, children depend on guidance from their families and caregivers who may not have the resources or knowledge needed to set good examples or expectations for food choices and eating behaviors (Swindle et al., 2021). This level of understanding of factors contributing to childhood obesity is a prerequisite to developing effective multistate programming, including consideration of whether it is possible to build comprehensive, synergistic programs promoting healthy weight in childhood across the nation.

Most Extension childhood obesity prevention programs only consider child health factors and the developmental context of the state where they were developed. A review of the literature revealed there had been few coordinated or concerted efforts to determine overlap, reduce duplication, or identify best practices for comprehensive obesity prevention programs that practitioners and educators can use to prevent childhood obesity (Li et al., 2020). With a lack of understanding about the effectiveness of these programs for diverse state populations, it is difficult to understand the strengths of each program and the critical components necessary to prevent childhood obesity.

In efforts to better understand what makes these Extension programs effective, the National Institute of Food and Agriculture (NIFA) Multistate Project W3005 Extension Workgroup (Workgroup) identified existing programs and curricula within each state targeting obesity prevention in children ages 2–12 years, with a focus on those implemented within the community through Extension. To fill the gap, the Workgroup developed an Extension Program Evaluation Rubric to compare programs with components related to childhood obesity prevention. This paper details the development and piloting of this novel rubric.

Rubric Development

The development of the Extension Program Evaluation Rubric began in 2018 and consisted of four phases during the iterative development process. The four phases included (a) a scoping literature review, (b) formative semi-structured interviews, (c) external (outside Workgroup) piloting of the tool, and (d) a final internal (within Workgroup) piloting of the tool. The result of this process was a newly developed tool that is ready for broad dissemination. Detailed procedures for each phase are provided below.

Phase 1: Scoping Literature Review

First, members of the Workgroup conducted a scoping review of the literature, which identified a World Health Organization (WHO) rubric called the Good Practice Appraisal Tool as the most used evaluation for educational programs (WHO, 2017). The WHO rubric was developed to "assess good practice elements of design, monitoring, evaluation, and implementation of preventive programmes, projects, initiatives and interventions that aim to counteract obesity and improve nutrition and physical activity" (p. 2). The WHO tool is comprised of three sections: a questionnaire for information gathering (43 items), an appraisal form (43 items), and a scoring description. Previously cited drawbacks of the tool are its length and some confusion in the definitions of program versus intervention (Mantziki et al., 2018). In addition, the Workgroup reviewed the WHO tool and found two additional revisions needed for childhood obesity programs in Extension. First, several items were deemed less relevant to evaluating Extension childhood obesity interventions than others and were eliminated. For example, time management of intervention implementation, the budget of the intervention, and monitoring intervention resource utilization were deemed less relevant than other items, including intervention study design, monitoring reliability and validity of evaluation instruments, measurement at multiple time points, and engagement of families, schools, and teachers. Second, several items would be difficult to capture in Extension programs, such as the total budget, whether the intervention would have a lasting effect on risk factors, and if the program aimed to empower the target group.

The Workgroup identified only one other evaluation tool that was publicly available between 2011 and 2018: Guide for Nutrition Interventions and Education (GENIE), developed by the Academy of Nutrition and Dietetics. The GENIE includes nine sections with 35 total items that

are also scored. The GENIE tool has been reported to be a valid and reliable tool for nutrition education practitioners, researchers, and program funding agencies (Hand et al., 2015). The GENIE has been included in a review examining published programs (n = 102) and comparing GENIE components to program details to identify qualities of high-scoring versus low-scoring programs (Abram et al., 2015). A review of the GENIE items by the team revealed some overlap between GENIE and WHO items as well as items that the group felt were redundant within GENIE.

The Workgroup conducted separate iterative reviews of the GENIE and the WHO tool. After each item of each tool was examined, discussed, and compared to items in the other tool, a modified combination of the two tools was developed. The initial combination of the WHO and GENIE resulted in 27 items, and the tool was named W3005 Child Obesity Prevention Programs in Extension Rubric (COPPER). Additional discussion and refinement by the Workgroup resulted in a tool with three broad sections revolving around program goals, program content, and program evaluation.

The program goals section included questions about short, medium, and long-term goals with an evaluative response of *yes*, *somewhat*, and *no* and space for comments. Program content included topics relevant to childhood obesity, such as healthy eating, physical activity, and caregiver involvement. Nine items inquired about program development input and considerations, such as stakeholder or target group input, incorporation of existing nutrition or physical activity guidelines, best practices, research evidence, and learning techniques or behavior change strategies. Other considerations included seven items, such as language (e.g., English, Spanish), reading level, and age/development of the target group of children. All items included the same evaluative responses of *yes*, *somewhat*, and *no*. Program evaluation included ten items: reliable, valid, chosen based on related research or best practice, measurements at multiple time points, process evaluation tools, tools for cost-effectiveness determination, a statistical plan, tools for control group evaluation, tools for evaluating partnership support, and tools for evaluating program sustainability. These also had the same evaluative responses of *yes*, *somewhat*, and *no*, and a column for adding comments after the closed-ended response. Additional review and discussion by the Workgroup further refined the wording and response choices for clarity and appropriateness.

Phase 2: Formative Semi-Structured Interviews

Before piloting COPPER with existing childhood obesity prevention programs, Workgroup members conducted six semi-structured interviews with individuals who were not part of the Workgroup tool development process to determine the face and content validity of the instrument. Workgroup members compiled a comprehensive list of Extension and non-Extension programs from across the U.S. targeting children ages 2–12 relative to nutrition, physical activity, and/or caregiving. Workgroup members from seven states representing divergent populations and spanning west to east and north to south used regional knowledge, existing online databases of programs, and

professional networks and organizations to compile the list of programs and respective contacts. The only requirements for inclusion on the compiled list were that programs were multi-session, including resources to support lesson and program implementation with a focus on preschool and school-age children. There were no requirements based on the setting of delivery, number of sessions, or modality to examine the tool in a variety of contexts. When necessary, information regarding relevant programs was provided to the Workgroup by appropriate program administrators and/or personnel implementing the programs. For this phase and subsequent phases of rubric development, it was not required that programs be considered Supplemental Nutrition Assistance Program Education (SNAP-Ed) programming.

From this list, six individuals from six different states who were not part of the Workgroup were identified to be interviewed about their existing nutrition education program using the COPPER tool and interview guide, taking into consideration diverse geographic locations across the U.S., equal representation from programs focused on preschool and school-age children, and both Extension and non-Extension programs. Workgroup members received approval from respective university Institutional Review Boards for the formative semi-structured interviews.

A semi-structured interview team was constituted within the Workgroup, and the members communicated with existing nutrition program developers by email to determine their willingness to participate and subsequently provided them with the newly developed COPPER tool for their review. An interview guide of 16 items built around the COPPER tool was used for interviews. Items focused on clarity and appropriateness of the rubric questions and scales to improve the usability of the COPPER tool by nutrition education professionals working in Extension and public health settings.

The interview team conducted interviews by phone and documented the process with detailed notes. Once interviews were completed, the interview team convened to discuss and condense the feedback from interviewees into common themes and discussion points for the larger Workgroup. Findings were presented to the larger Workgroup for discussion, and possible revisions to the COPPER were addressed.

The primary changes were as follows:

- The order of questions was rearranged to increase the logical flow of the tool.
- The format for the response to the question “Is the target group clearly identified?” was changed to a binary yes/no response with an additional clarifying question of “If yes, who?” that offered examples of target groups such as school-age children or preschoolers.
- Whether curriculum delivery method was direct or indirect was changed to a separate question.

- Items related to qualitative approaches to design, implementation, or evaluation were added.
- Questions regarding facilitator guides were expanded to include additional components.
- An item asking for up to five statements of evidence or references/citations that demonstrate the effectiveness of the program was added.
- An item asking about any program modifications made because of the COVID-19 pandemic was included.

The Workgroup reached a consensus to adopt these revisions resulting in the final version of the COPPER tool used for initial pilot testing with childhood obesity prevention programs.

Phase 3: External Piloting of the COPPER Tool

Before external pilot testing, the Workgroup requested a review by the designated university Institutional Review Boards. The project was deemed non-human subject research. To expedite the pilot process, the COPPER tool was converted to an online survey (Qualtrics). From the comprehensive list of programs previously compiled by Workgroup members, six additional programs from six different states were identified for the initial piloting of the COPPER, again respecting geographic diversity, variability in age representation of programs (preschool and school-age children), and both Extension and non-Extension programs. Workgroup members contacted individuals by phone or email for the six pilot programs and requested completion of the COPPER tool with the identified program in mind using the online survey form. Reminders were sent by email. All six pilot programs completed the review of their program using the COPPER tool.

Members of the Workgroup reviewed the data from the pilot survey, and numerous suggestions for revisions were made. Pilot study data revealed that most programs targeted young children from Pre-K to 2nd grade and focused on child nutrition/eating behaviors and child physical activity versus sedentary behaviors. Most of the programs used both direct (face-to-face) and indirect (newsletters and written materials) delivery methods.

Based on the data and Workgroup discussions, question three was revised to expand the age group categories to provide more explicit information allowing the Workgroup to ensure the program was targeting populations within the inclusion criteria. Because COPPER focuses on children from 2–12, skip logic was added for responses older than 12 years of age so the survey would terminate. The survey logic was also changed to enable the Qualtrics force response option for several questions, thus ensuring that respondents were reminded that program data was important to researchers. Respondents could choose to exit the survey (leave unfinished) rather than comply with the force response option. Revisions were made to question five, which queried about program delivery, to include “all” in the question and to spell out abbreviated wording for increased clarity. Guidance was also added to comment sections of the rubric, allowing participants to expand on the requested information. Finally, question twelve, which

queried statements of evidence for program efficacy, was revised to include impact statements and other appropriate forms of evidence relevant to Extension.

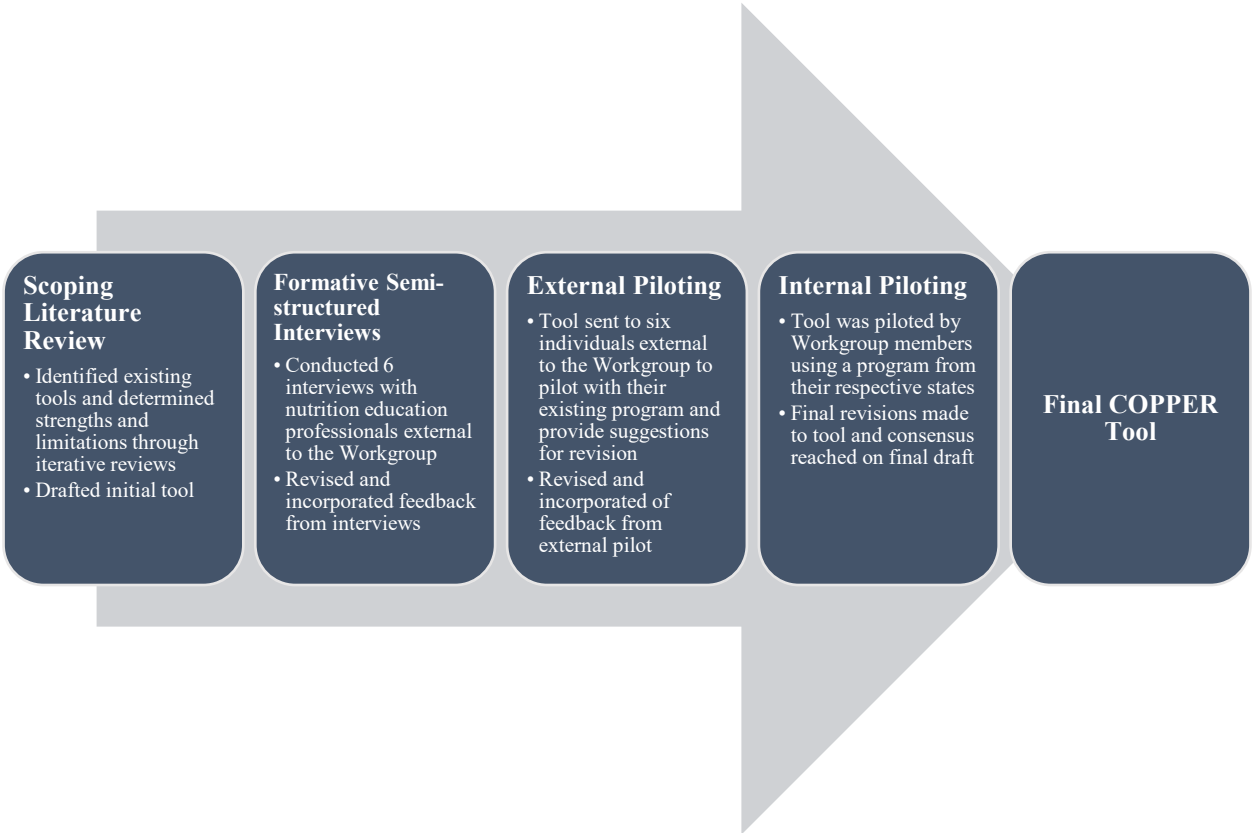
Phase 4: Internal Piloting of the COPPER Tool

During the Spring of 2021, Workgroup members were asked to use an existing program from Extension in their respective state that addressed childhood obesity and pilot the virtual COPPER tool for final refinement to the instrument, with particular interest in clarity and relevance. A total of eight programs were internally piloted.

Instituting a scoring system with COPPER was contemplated at this time. The Workgroup reached the consensus that the scoring system might result in inappropriate classification of programs, and it would not consider the diverse uses the tool might have during the development, implementation, adaptation, or adoption of programs.

As a result of the internal pilot, members of the Workgroup reached a consensus on the final wording of COPPER in April 2021. A visual representation of the rubric development process can be found in Figure 1.

Figure 1. Schematic Representation of Four Phases Used in Rubric Development



Final COPPER Tool

The final COPPER tool consists of 10 items, with one additional question related to possible changes to program implementation as a result of the COVID-19 pandemic. The COPPER Tool is provided at the end of this article.

This novel tool is multi-functional and may be beneficial during several stages of program development, implementation, and/or adaptation and adoption of programs in a new setting.

1. Program Development: Our development process has identified the included items and program components critical for an effective program. This tool may serve as a checklist for program components that are necessary when new programs are being developed to address multiple causal factors of childhood obesity.

2. Program Implementation: During the implementation of a program, this rubric may serve as an effective tool for process evaluation methodology. The included components within the rubric allow Extension, nutrition educators, and public health professionals addressing childhood obesity to identify gaps or necessary revisions to the program during the implementation process.

3. Adopting and/or Adapting a Program: As programs are shared nationwide in efforts to reduce duplication of efforts, this tool may function to allow potential adopters of new programs to examine the fit, scope, and effectiveness of the program under consideration. This would allow the organization or Extension service to decide what changes or modifications may be necessary prior to the dissemination of the new program in their state.

Discussion

The development of this novel tool will allow those interested in childhood obesity prevention to identify evidence-informed programs for healthy weight in childhood that focus on nutrition, physical activity, and/or child-caregiver relationships. Further, this collected information will provide a mechanism for evaluating the quality of programs and allow nutrition educators and public health professionals to offer synergistic programs for promoting healthy weight in childhood. Broadly, this novel tool will assist in the decision-making processes related to programming focused on childhood obesity.

Initially, the development of COPPER was driven by the need to have a systematic approach for scoring programs focused on childhood obesity. We reasoned that this would allow us to determine the best and most effective programming available across the country. However, during the iterative development process, we recognized the need for a nimble and adaptable tool that could be used within different contexts and settings. Furthermore, the pilot data revealed that

some programs included parents, whereas others did not, and methods of program evaluation were quite disparate. Because we identified such program diversity and because Extension is called on repeatedly to meet the changing needs of local communities, we concluded that a tool with flexibility in use would be more applicable for individuals developing, implementing, adopting, and adapting programs that meet specific needs in a geographic location.

With dwindling resources for Extension nationwide, it is imperative we consider more effective and efficient methods for identifying strong programming and reducing duplicate efforts in program development and implementation. There have been several efforts to collate and share existing programs addressing specific chronic health issues nationwide, but few have been successful in identifying programs and determining best practices. Livingstone et al. (2006) describe methodological issues in the design of childhood obesity programs, calling for better design and documentation to develop best practices. Dollahite et al. (2016) suggested best practices for choosing interventions to adopt with twelve questions reflecting program content, evidence of effectiveness, and audience and implementing agency fit. These guidelines are general and not specific to child obesity prevention. Baker et al. (2020) described the process and framework for best practices in nutrition education for adults from low-income areas. Twenty-eight practices within the five domains of program design, program delivery, educator characteristics, educator training, and evaluation are described. While the characteristics and training of the educator are not included in COPPER, these issues may become important in the future. A systematic review of nutrition education intervention identified programs lasting more than five months, having less than three focused objectives, appropriate program design and theoretical framework, intervention fidelity, and policy and management support as being related to intervention effectiveness (Murimi et al., 2017). These issues are more specific in some ways than the COPPER and may provide complementary insight when selecting programs.

Program identification and selection may be impeded by personnel changes in Extension and reduced capacity for accurately tracking ever-changing evidence on programs that address complex and evolving problems like childhood obesity. Similar to a webinar evaluation for the Extension Teaching rubric (Robideau & Matthes, 2021), the COPPER tool can be used to fill this gap in discerning best practices and necessary components for effective childhood obesity programs. Specifically, this novel tool has the potential to strengthen program and/or research development, build confidence or self-efficacy in program or research development, and guide reflective planning. Finally, the pilot test of COPPER indicated the rubric was easy and feasible to deliver online to programs meeting the inclusion criteria.

Future Directions

The purpose of this manuscript is to detail the iterative development process and initial piloting of a novel rubric for childhood obesity prevention programming. Future evaluation is required to examine the use of the tool in a broader capacity and from states not represented throughout the

development process. With a final tool developed, efforts can now be made to test the rubric for reliability and validity within different contexts in which the rubric will be used, such as interventions in childcare settings, public school classrooms and playground settings, in shelters for children and families experiencing homelessness, and in rural versus urban settings. Testing will allow us to demonstrate the validity across contexts and allows researchers to determine whether internal consistency reliability and test-retest reliability fluctuations are a function of context. In addition, the establishment of a centralized database of information revealed by COPPER for shared use will be explored.

The COPPER appears to be a beneficial tool to evaluate Extension, public health, and other community programs focused on factors central to childhood obesity and targeting young children, parents, and/or caregivers. As such, multiple existing mechanisms will be leveraged to disseminate the tool more widely to interested Extension programs and stakeholders. These mechanisms include, but are not limited to, national listservs and established workgroups in which study personnel are connected, regional Program Leaders meetings, virtual Extension dashboards and platforms (e.g., Extension Foundation), and relevant national meetings.

In sum, the newly developed COPPER may have the potential to provide Extension, nutrition educators, and public health professionals with guidance in choosing, implementing, and adapting evidence-based programming to address childhood obesity.

References

Abram, J. K., Hand, R. K., Parrott, J. S., Brown, K., Ziegler, P. J., & Steiber, A. L. (2015). What is your nutrition program missing? Finding answers with the Guide for Effective Nutrition Interventions and Education (GENIE). *Journal of the Academy of Nutrition and Dietetics*, *115*(1), 122–130. https://doi.org/10.1016/j.jand.2014.08.024

Baker, S., Auld, G., Ammerman, A., Lohse, B., Serrano, E., & Wardlaw, M. K. (2020). Identification of a framework for best practices in nutrition education for low-income audiences. *Journal of Nutrition Education and Behavior*, *52*(5), 546–552. https://doi.org/10.1016/j.jneb.2019.12.007

Centers for Disease Control and Prevention. (2020). *Trends in the prevalence of obesity and dietary behaviors national YRBS: 1991–2019*. https://www.cdc.gov/healthyyouth/data/yrbs/factsheets/2019_obesity_trend_yrbs.htm

Centers for Disease Control and Prevention. (2021). *Childhood obesity facts*. https://www.cdc.gov/obesity/data/childhood.html

Dollahite, J. S., Fitch, C., & Carroll, J. (2016). What does evidence-based mean for nutrition educators? Best practices for choosing nutrition education interventions based on the strength of the evidence. *Journal of Nutrition Education and Behavior*, *48*(10), 743–748. https://doi.org/10.1016/j.jneb.2016.06.008

Gori, D., Guaraldi, F., Cinocca, S., Moser, G., Rucci, P., & Fantini, M. P. (2017). Effectiveness of educational and lifestyle interventions to prevent paediatric obesity: Systematic review and meta-analyses of randomized and non-randomized controlled trials. *Obesity Science & Practice*, *3*(3), 235–248. https://doi.org/10.1002/osp4.111

Hand, R. K., Abram, J. K., Brown, K., Ziegler, P. J., Parrott, J. S., & Steiber, A. L. (2015). Development and validation of the Guide for Effective Nutrition Interventions and Education (GENIE): A tool for assessing the quality of proposed nutrition education programs. *Journal of Nutrition Education and Behavior*, *47*(4), 308–316. https://doi.org/10.1016/j.jneb.2015.03.003

Imoisili, O., Dooyema, C., Kompaniyets, L., Lundeen, E. A., Park, S., Goodman, A. B., & Blanck, H. M. (2020). Prevalence of overweight and obesity among children enrolled in Head Start, 2012–2018. *American Journal of Health Promotion*, *35*(3), 334–343. https://doi.org/10.1177/0890117120958546

Koyama, S., Ichikawa, G., Kojima, M., Shimura, N., Sairenchi, T., & Arisaka, O. (2014). Adiposity rebound and the development of metabolic syndrome. *Pediatrics*, *133*(1), e114-e119. https://doi.org/10.1542/peds.2013-0966

Li, J. C., Welsh, J. A., DiNallo, J. M., & Nix, R. L. (2020). Parent-focused childhood obesity intervention improves family functioning and children's well-being. *Journal of Extension*, *58*(2). https://tigerprints.clemson.edu/joe/vol58/iss2/21/

Livingstone, M. B. E., McCaffrey, T. A., & Rennie, K. L. (2006). Childhood obesity prevention studies: Lessons learned and to be learned. *Public Health Nutrition*, *9*(8A), 1121–1129. https://doi.org/10.1017/s1368980007668505

Mantziki, K., Renders, C. M., Westerman, M. J., Mayer, J., Borys, J. M., & Seidell, J. C. (2018). Tools for a systematic appraisal of integrated community-based approaches to prevent childhood obesity. *BMC Public Health*, *18*(1). https://doi.org/10.1186/s12889-018-5042-4

Murimi, M. W., Kanyi, M., Mupfudze, T., Amin, M. R., Mbogori, T., & Aldubayan, K. (2017). Factors influencing efficacy of nutrition education interventions: A systematic review. *Journal of Nutrition Education and Behavior*, *49*(2), 142–165. https://doi.org/10.1016/j.jneb.2016.09.003

Oosterhoff, M., Joore, M., & Ferreira, I. (2016). The effects of school-based lifestyle interventions on body mass index and blood pressure: A multivariate multilevel meta-analysis of randomized controlled trials. *Obesity Reviews*, *17*(11), 1131–1153. https://doi.org/10.1111/obr.12446

Péneau, S., González-Carrascosa, R., Gusto, G., Goxe, D., Lantieri, O., Fezeu, L., Hercberg, S., & Rolland-Cachera, M. F. (2016). Age at adiposity rebound: Determinants and association with nutritional status and the metabolic syndrome at adulthood. *International Journal of Obesity*, *40*(7), 1150–1156. https://doi.org/10.1038/ijo.2016.39

Perpich, K. J., Russ, R., Rizzolo, D., & Sedrak, M. (2011). Childhood obesity: Understanding the causes, beginning the discussion. *Journal of the American Academy of Physician Assistants*, *24*(12), 30–34. https://doi.org/10.1097/01720610-201112000-00005

Robideau, K., & Matthes, K. (2021). Using webinars to teach Extension audiences: A rubric to evaluate and improve. *Journal of Human Sciences and Extension, 9*(2), 156–164. https://doi.org/10.54718/WADO4568

Swindle, T., Phelps, J., McBride, N. M., Selig, J. P., Rutledge, J. M., & Manyam, S. (2021). Table talk: Revision of an observational tool to characterize the feeding environment in early care and education settings. *BMC Public Health*, *21*(1). https://doi.org/10.1186/s12889-020-10087-8

Tomayko, E. J., Tovar, A., Fitzgerald, N., Howe, C. L., Hingle, M. D., Murphy, M. P., Muzaffar, H., Going, S. B., & Hubbs-Tait, L. (2021). Parent involvement in diet or physical activity interventions to treat or prevent childhood obesity: An umbrella review. *Nutrients*, *13*(9), 3227. https://doi.org/10.3390/nu13093227

Verjans-Janssen, S. R., van de Kolk, I., Van Kann, D. H., Kremers, S. P., & Gerards, S. M. (2018). Effectiveness of school-based physical activity and nutrition interventions with direct parental involvement on children's BMI and energy balance-related behaviors – a systematic review. *PLOS ONE*, *13*(9). https://doi.org/10.1371/journal.pone.0204560

White, A. A., Colby, S. E., Franzen-Castle, L., Kattelmann, K. K., Olfert, M. D., Gould, T. A., Hagedorn, R. L., Mathews, D. R., Moyer, J., Wilson, K., & Yerxa, K. (2019). The iCook 4-H study: An intervention and dissemination test of a youth/adult out-of-school program. *Journal of Nutrition Education and Behavior*, *51*(3), S2–S20. https://doi.org/10.1016/j.jneb.2018.11.012

World Health Organization. (2017, March 18). *Good practice appraisal tool for obesity prevention programmes, projects, initiatives and interventions*. https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/publications/guidance-and-tools/nutrition-and-diet-related-noncommunicable-diseases/good-practice-appraisal-tool-for-obesity-prevention-programmes,-projects,-initiatives-and-interventions

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W3005-COPPER Evaluation Tool

The National Institute of Food and Agriculture (NIFA) W3005 Multistate Workgroup have developed a tool that will describe programs and curricula targeting childhood obesity prevention for children ages 2-12. This tool may aid in developing, implementing, adopting, and/or adapting a program to fit your needs.

Q1 Name of the program or intervention:

Q2 Select the age group for the intervention which you are completing the survey for.

o Pre-K o Early Elementary o Elementary o Middle School

Q3 Does the intervention target a specific race, ethnicity, gender, etc.? If so, please describe.

Q4 Identify the people (e.g., child) and components (e.g., nutrition, eating behaviors) addressed by the program/intervention.

	Addressed?		
	Yes	No	Comments or additional specifics
Child: nutrition-diet quality	○	○	
Child: nutrition-eating behaviors	○	○	
Parent/caregiver: nutrition-diet quality of child	○	○	
Parent/caregiver: nutrition-feeding practices	○	○	
Teacher: nutrition-diet quality of child	○	○	
Teacher: nutrition-feeding practice	○	○	
Policy, systems, environment: nutrition	○	○	
Child: physical activity/sedentary behavior	○	○	
Parent/caregiver: physical activity/sedentary behavior of child	○	○	
Teacher: physical activity/sedentary behavior of child	○	○	
Policy, systems, environment: physical activity/sedentary behavior	○	○	
Other	○	○	

Q5 Describe all the delivery method(s) of the program/ intervention (select all that apply).

	Included?		
	Yes	No	Comments or additional specifics
Direct (e.g., class)	○	○	
Indirect (e.g., newsletter)	○	○	
Policy, systems, environment (e.g., site/school changes)	○	○	

Q6 In the development, implementation, and/or evaluation of this program/intervention, which of the following study designs were used (select all that apply)?

	Used?		
	Yes	No	Comments or additional specifics
Randomized controlled trial (RCT), cluster RCT	○	○	
Comparison/control group (no randomization)	○	○	
Evaluation with pre-test and post-test measurements	○	○	
Retrospective-pretest post-test	○	○	
Focus groups/key informant interviews	○	○	
Other qualitative approaches (e.g., photovoice, community participatory programming, GPS)	○	○	

Q7 Are program/intervention goals and/or objectives outlined?

	Goals and/or Objectives		
	Yes, Specific (e.g., SMART approach)	Yes, Broad	No
Short-Term (e.g., knowledge, attitudes)	○	○	○
Medium-Term (e.g., behavior, skills)	○	○	○
Long-Term (e.g., BMI, health indicators)	○	○	○

Q8 **In the development of this program/intervention, which of the following were included (select all that apply)?**

	Included?		
	Yes	Somewhat	No or unknown
Stakeholder input (e.g., investors, legislators, health department, community groups)	○	○	○
Target group input (If yes, please provide in the comments what group provided input.)	○	○	○
Needs assessment	○	○	○
Research-based content or delivery	○	○	○
National or international diet and physical activity guidelines	○	○	○
Multiple techniques to promote learning (e.g., different forms of engagement)	○	○	○
Multiple strategies to effect behavior change (e.g., goal-setting, motivational strategies)	○	○	○
Evidence/best practice/rationale to support time frame (e.g., 6 months of program duration)	○	○	○
Evidence/best practice/rationale to support dose (e.g., 30 minutes, 3 times/week)	○	○	○

Q9 In the development of this program/intervention, which of the following were considered (select all that apply)?

	Considered?		
	Yes	Surface	No
Language (e.g., English, Spanish)	○	○	○
Reading level	○	○	○
Cultural relevance	○	○	○
Family structure	○	○	○
Economic situation	○	○	○
Age/developmental stage matched	○	○	○
Learning style and/or format	○	○	○

Q10 Is there a facilitator's guide?

- ○ Yes
- ○ No

Q11 Which of the following are included in the program?

	Included?		
	Yes	No	Comments or additional specifics
Evaluation tools that are reliable and valid	○	○	
Measurements at multiple time-points	○	○	
Marketing plan and materials	○	○	
Recruitment strategies	○	○	
Strategies to engage families and/or parents/caregivers	○	○	
Strategies to engage schools, childcare centers, and/or teachers/caregivers	○	○	
Process evaluation tools	○	○	
Sustainability plan	○	○	
Tools for cost effectiveness determination	○	○	
Tools for evaluating partnership support	○	○	
Tools for evaluating program sustainability	○	○	

Q12 List up to 5 statements of evidence that demonstrate effectiveness of the program. Include references, impact statements, or best practices when possible.

Q13 Assuming the responses you provided relate to a program developed before COVID-19, have you made any program changes during the pandemic?