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NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

SPECIAL COLLECTION

About the 2023 NOPREN Special Collection

The NOPREN Special Collection features peer-reviewed publications authored by NOPREN members in 2023. This curated collection showcases the impact of NOPREN's collaborative research and evaluation activities. It spotlights the many ways in which NOPREN member's research has informed nutrition policy and practice at the national, state, and local levels. Included in the collection are articles on early childhood, drinking water access, federal nutrition assistance programs, rural food access, and pediatric obesity.

Article Key Words

COVID-19 Food & Nutrition



Drinking Water



Early Childhood



Food Security



Food Service Guidelines



Pediatric Obesity



Rural Food Access



School Wellness



Articles

1. CHALLENGES AND OPPORTUNITIES FOR EQUITY IN US SCHOOL MEAL PROGRAMS: A SCOPING REVIEW OF QUALITATIVE LITERATURE REGARDING THE COVID-19 EMERGENCY

Harper, K., Bode, B., Gupta, K., Terhaar, A., Aysegul Baltaci, Asada, Y., & Lane, H. (2023). Challenges and Opportunities for Equity in US School Meal Programs: A Scoping Review of Qualitative Literature Regarding the COVID-19 Emergency. *Nutrients*, 15(17), 3738–3738. <https://doi.org/10.3390/nu15173738>

Abstract:

The emergency school meals program provided free meals to children in the United States (US) during COVID-19-related school closures. This scoping review aims to synthesize the existing qualitative empirical evidence published between March 2020 and January 2023 on the operations and utilization of emergency school meal programs during the pandemic. Qualitative, US-based peer-reviewed literature was collected from three sources: (1) parent review of all federal nutrition assistance programs; (2) systematic search of four databases; and (3) manual search of grey literature. Identified scientific articles and grey literature reports (n = 183) were uploaded into Covidence and screened for duplicates and inclusion/exclusion criteria. Our final sample included 21 articles/reports, including 14 mixed methods and seven qualitative-only projects. Articles spanned all U.S. states. Articles had similar research questions to understand school meals and/or general food access during COVID-19, with an emphasis on long-term policy implications. Hybrid deductive/inductive analytic coding was used to analyze data, utilizing domains from the Getting to Equity Framework (GTE). GTE considers multi-level factors that influence nutrition behavior while centering more equitable pathways to improve nutrition security and reduce adverse health. Findings were sorted into two categories: operational challenges during the pandemic and solutions to address inequities in school meal distribution during and after the pandemic, particularly during school closures such as summers or future emergencies. Key challenges related to supply chain issues, safety, and balancing families' needs with limited staff capacity. Programs addressed equity by (a) reducing deterrents through federally issued waivers and increased communications which allowed the serving of meals by programs to families who previously did not have access, (b) building community capacity through collaborations and partnerships which allowed for increased distribution, and (c) preparing and distributing healthy options unless barriers in supply chain superseded the effort. This review highlights the importance of emergency school meal programs and provides insights into addressing challenges and promoting equity in future out-of-school times. These insights could be applied to policy and practice change to optimize program budgets, increase reach equitably, and improve access to nutritious meals among populations at highest risk for nutrition insecurity.

2. CLOSING THE GAP BETWEEN EVIDENCE AND PRACTICE FOR CHILDHOOD OBESITY TREATMENT

Button, A. M., Staiano, A. E., & Seligman, H. K. (2023). Closing the Gap Between Evidence and Practice for Childhood Obesity Treatment. *Childhood Obesity*. <https://doi.org/10.1089/chi.2023.0136>

Abstract:

The 2023 release of the American Academy of Pediatrics' clinical practice guidelines on the treatment of child and adolescent obesity highlighted a major gap between the extensive evidence on safe effective treatment and the availability of these services for the one in five U.S. children affected by obesity. Also launched in 2023, the Pediatric Obesity Health Services Research Work Group of the Nutrition and Obesity Policy Research and Evaluation Network (NOPREN; <https://nopren.ucsf.edu/pediatric-obesity-health-services-research-work-group>) aims to study and advance implementation of equitable evidence-based practices and policies for pediatric obesity prevention and treatment. To facilitate this aim, 183 interdisciplinary attendees joined a video conference in June 2023 to discuss the future of health services for youth with obesity and determine the critical gaps. This editorial summarizes the overarching themes identified.



3. COMPARING DIET QUALITY INDICES FOR LOW-INCOME 24-MONTH-OLD TODDLERS: EXPLORING CHANGES DRIVEN BY 2020–2025 DIETARY GUIDELINES FOR AMERICANS

Kay, M. C., Duffy, E. W., Sun, B., & Borger, C. (2022). Comparing Diet Quality Indices for Low-Income 24-Month-Old Toddlers: Exploring Changes Driven by 2020–2025 Dietary Guidelines for Americans. *The Journal of Nutrition*. <https://doi.org/10.1016/j.tjnut.2022.11.016>

Abstract:

Background

Accurate assessment of toddler [diet quality](#) is essential for understanding current intakes and evaluating the effect of interventions and programs to promote healthy eating and prevent chronic disease.

Objectives

The goal of this article was to assess the diet quality among toddlers using two different indices appropriate for 24-month toddlers and compare differences in scoring between the measures by race and Hispanic origin.

Methods

We used cross-sectional data from 24-month-old toddlers participating in the Special Supplemental [Nutrition Program](#) for Women, Infants, and Children (WIC) Infant and Toddler Feeding Practices Study-2 (ITFPS-2), a national study that includes 24-hour dietary recall information from children enrolled in WIC at birth. The main outcome measure was diet quality using both the toddler diet quality index (TDQI) and the healthy eating index (HEI)-2015. We derived mean scores for overall diet quality and for each component. We examined associations between the distribution of diet quality scores across terciles and by race and Hispanic origin using Rao-Scott chi-square tests of association.

Results

Nearly half of the mothers and caregivers self-identified as Hispanic (49%). Diet quality scores were higher when using the HEI-2015 compared with the TDQI (56.4 vs. 49.9, respectively). The difference in component scores was largest for [refined grains](#), followed by [sodium](#), added sugars, and dairy. Toddlers from Hispanic mothers and caregivers had significantly higher component scores for greens and beans and dairy but had lower scores for whole [grains](#) ($P < 0.05$) than those for the other racial and ethnic subgroups assessed.

Conclusions

We found noteworthy differences in toddler diet quality depending on whether the HEI-2015 or TDQI is used, and children of different racial and ethnic subgroups may be differentially classified as having high or low diet quality depending on which index is used. This may have important implications for understanding which populations are at risk of future diet-related diseases.



4. COST ANALYSIS AND COST EFFECTIVENESS OF A SUBSIDIZED COMMUNITY SUPPORTED AGRICULTURE INTERVENTION FOR LOW-INCOME FAMILIES

Garner, J. A., Hanson, K. L., Pitts, S. B. J., Kolodinsky, J., Sitaker, M. H., Ammerman, A. S., Kenkel, D., & Seguin-Fowler, R. A. (2023). Cost analysis and cost effectiveness of a subsidized community supported agriculture intervention for low-income families. *International Journal of Behavioral Nutrition and Physical Activity*, 20(1), 1–9. <https://doi.org/10.1186/s12966-023-01481-7>

Abstract:

Background

The food system has a dynamic influence on disparities in food security and diet-related chronic disease. Community supported agriculture (CSA) programs, in which households receive weekly shares of produce from a local farmer during the growing season, have been examined as a possible food systems-based approach for improving diet and health outcomes. The purpose of this study was to estimate the cost of implementing and participating in a multi-component subsidized community supported agriculture intervention and calculate cost-effectiveness based on diet and food security impacts.

Methods

Using data from the Farm Fresh Foods for Healthy Kids (F3HK) randomized controlled trial in New York, North Carolina, Vermont, and Washington ($n = 305$; 2016–2018), we estimated programmatic and participant costs and calculated incremental cost-effectiveness ratios (ICERs) for caregivers' daily fruit and vegetable (FV) intake, skin carotenoids, and household food security from program and societal perspectives.

Results

F3HK cost \$2,439 per household annually (\$1,884 in implementation-related expenses and \$555 in participant-incurred costs). ICERs ranged from \$1,507 to \$2,439 per cup increase in caregiver's FV intake (depending on perspective, setting, and inclusion of juice); from \$502 to \$739 per one thousand unit increase in skin carotenoid score; and from \$2,271 to \$3,137 per household shifted out of food insecurity.

Conclusions

Given the known public health, healthcare, and economic consequences of insufficient FV intake and living in a food insecure household, the costs incurred to support these positive shifts in individual- and household-level outcomes via a F3HK-like intervention may be deemed by stakeholders as a reasonable investment. This work helps to advance a critical body of literature on the cost-effectiveness of subsidized CSAs and other economic and food system interventions for the sake of evidence-based allocation of public health resources.



5. HEIGHT AND WEIGHT MEASUREMENT AND COMMUNICATION WITH FAMILIES IN HEAD START: DEVELOPING A TOOLKIT AND ESTABLISHING BEST PRACTICES

Tovar, A., Fischbach, S. R., Miller, M. E., Guseman, E. H., Stage, V. C., Wentzell, B., Benjamin-Neelon, S. E., Hoffman, J. A., Beltran, M., & Sisson, S. B. (2024). Height and Weight Measurement and Communication With Families in Head Start: Developing a Toolkit and Establishing Best Practices. *Childhood Obesity*. <https://doi.org/10.1089/chi.2023.0166>

Abstract:

Background: Head start (HS) programs are required to collect children's height and weight data. Programs also communicate these results to families. However, no standardized protocol exists to guide measurements or communicate results. The purpose of this article was to describe the development of a measurement toolkit and best practices for communication. **Methods:** HS programs contributed to the development and pilot testing of a toolkit for HS staff to guide child measurement. We used a three-phase iterative approach and qualitative methods to develop and test the toolkit, which included a video and handout. In addition, we convened an advisory group to draft best practices for communication. **Results:** HS program staff appreciated the toolkit materials for their simplicity and content. The advisory group highlighted the importance of weight stigma and the need to be cautious in the way that information is communicated to families. The group underscored the role of emphasizing health behavior change, instead of focusing solely on BMI. Best practices were organized into (1) Policies and procedures for communicating screening results, (2) training for HS program staff to improve communication related to screening and health behaviors, and (3) other best practices to promote health behaviors and coordinate data systems. **Conclusions:** Our toolkit can improve anthropometric measurements of HS to ensure that potential surveillance data are accurate. Advisory group best practices highlight opportunities for HS to develop and implement policies, procedures, and trainings across the country to improve communication with HS families. Future research should test the implementation of these best practices within HS.



6. PERCEPTIONS OF WATER SAFETY AND TAP WATER TASTE AND THEIR ASSOCIATIONS WITH BEVERAGE INTAKE AMONG U.S. ADULTS

Park, S., Onufrak, S. J., Craddock, A. L., Patel, A., Hecht, C., & Blanck, H. M. (2023). Perceptions of Water Safety and Tap Water Taste and Their Associations With Beverage Intake Among U.S. Adults. *American Journal of Health Promotion*, 37(5), 089011712211500. <https://doi.org/10.1177/08901171221150093>

Abstract:

Objectives: Examine differences in perceptions of tap water (TW) and bottled water (BW) safety and TW taste and their associations with plain water (PW) and sugar-sweetened beverage (SSB) intake.

Design: Quantitative, cross-sectional study.

Setting: United States.

Subjects: 4,041 U.S. adults (≥ 18 years) in the 2018 SummerStyles survey data.

Measures: Outcomes were intake of TW, BW, PW (tap and bottled water), and SSB. Exposures were perceptions of TW and BW safety and TW taste (disagree, neutral, or agree). Covariates included sociodemographics.

Analysis: We used chi-square analysis to examine sociodemographic differences in perceptions and multivariable logistic regressions to estimate adjusted odds ratios (AOR) for consuming TW ≤ 1 cup/day, BW > 1 cup/day, PW ≤ 3 cups/day, and SSB ≥ 1 time/day by water perceptions.

Results: One in 7 (15.1%) of adults did not think their home TW was safe to drink, 39.0% thought BW was safer than TW, and 25.9% did not think their local TW tasted good. Adults who did not think local TW was safe to drink had higher odds of drinking TW ≤ 1 cup/day (AOR = 3.12) and BW > 1 cup/day (AOR = 2.69). Adults who thought BW was safer than TW had higher odds of drinking TW ≤ 1 cup/day (AOR = 2.38), BW > 1 cup/day (AOR = 5.80), and SSB ≥ 1 time/day (AOR = 1.39). Adults who did not think TW tasted good had higher odds of drinking TW ≤ 1 cup/day (AOR = 4.39) and BW > 1 cup/day (AOR = 2.91).

Conclusions: Negative perceptions of TW safety and taste and a belief BW is safer than TW were common and associated with low TW intake. Perceiving BW is safer than TW increased the likelihood of daily SSB intake. These findings can guide programs and services to support water quality to improve perceptions of TW safety and taste, which might increase TW intake and decrease SSB intake.



7. POLICY, SYSTEM, AND ENVIRONMENTAL INTERVENTIONS ADDRESSING OBESITY AND DIET-RELATED OUTCOMES IN EARLY CHILDHOOD EDUCATION SETTINGS: A SYSTEMATIC REVIEW

Staiano, A. E., Burkart, S., Flanagan, E. W., Melnick, E., Luecking, C., & Neshteruk, C. D. (2023). Policy, system, and environmental interventions addressing obesity and diet-related outcomes in early childhood education settings: A systematic review. *Obesity Reviews*. <https://doi.org/10.1111/obr.13547>

Abstract:

Early childhood education (ECE) settings play an important role in child dietary intake and excess weight gain. Policy, systems, and environment (PSE) approaches have potential to reduce disparities in children at higher risk for obesity. The purpose of this review was to (1) characterize the inclusion of populations at higher risk for obesity in ECE interventions and (2) identify effective ECE interventions in these populations. Seven databases were searched for ECE interventions. Intervention characteristics and methodological quality were assessed in 35 articles representing 34 interventions. Interventions identified were mainly a combination of ECE and parent interventions (41%) or stand-alone ECE intervention (29%), with few multisector efforts (23%) or government regulations assessed (5%). Many included policy (70%) or social environment components (61%). For Aim 1, two thirds were conducted in primarily populations at higher risk for obesity (67%). Studies were rated as fair or good methodological quality. For Aim 2, 10 studies demonstrated effectiveness at improving diet or reducing obesity in populations at higher risk for obesity. Most included a longer intervention (i.e., >6 months), multiple PSE components, and formative work. Opportunities to incorporate more PSE components in ECE-based interventions and collaborate with parents and communities are warranted to improve child health.



8. POLICY, SYSTEMS, AND ENVIRONMENTAL INTERVENTIONS ADDRESSING PHYSICAL ACTIVITY IN EARLY CHILDHOOD EDUCATION SETTINGS: A SYSTEMATIC REVIEW

Neshteruk, C. D., Burkart, S., Flanagan, E. W., Melnick, E., Luecking, C., & Kracht, C. L. (2023). Policy, systems, and environmental interventions addressing physical activity in early childhood education settings: A systematic review. *Preventive Medicine*, 173, 107606–107606. <https://doi.org/10.1016/j.ypmed.2023.107606>

Abstract:

Policy, systems, and environmental (PSE) approaches can facilitate physical activity in priority populations (e.g., racial and ethnic minority, low wealth groups) within early childhood education (ECE) settings. The purpose of this review was to 1) characterize the inclusion of priority populations within ECE physical activity interventions containing PSE approaches and 2) identify and describe interventions within these populations. Seven databases were systematically searched (January 2000-February 2022) for ECE-based interventions focusing on children (0-6 years) that utilized at least one PSE approach. Eligible studies included a child physical activity or physical activity environment outcome and child or center-level population characteristics. Forty-four studies, representing 42 interventions were identified. For Aim 1, half of interventions included one PSE approach (21/42), with only 11/42 including three or more approaches. Physical environment changes [e.g., adding play equipment, modifying space (25/42)] were the most used PSE approaches followed by system [e.g., integrating activity into routines, (21/42)] and policy [e.g., outdoor time (20/42)] approaches. Nearly half of interventions were conducted in predominantly priority populations (18/42). Studies were primarily rated as good (51%) or fair (38%) methodological quality using the Downs and Black checklist. In Aim 2, of the 12 interventions assessing child physical activity in priority populations, 9/12 reported at least one physical activity outcome in the expected direction. Of the 11 interventions assessing the physical activity environment, 9/11 reported an effect in the expected direction. Findings indicate clear opportunities exist to target priority populations by incorporating PSE approaches in ECE physical activity interventions.



9. A QUALITATIVE EXPLORATION OF BARRIERS, FACILITATORS AND BEST PRACTICES FOR IMPLEMENTING ENVIRONMENTAL SUSTAINABILITY STANDARDS AND REDUCING FOOD WASTE IN VETERANS AFFAIRS HOSPITALS

Williams, B. D., Stephanie Jilcott Pitts, Onufrak, S. J., Sirois, E., Utech, A., Wood, M., Silverman, J., Funke Ajenikoko, Murphy, M., & Amy Lowry Warnock. (2024). A qualitative exploration of barriers, facilitators and best practices for implementing environmental sustainability standards and reducing food waste in veterans affairs hospitals. *Journal of Human Nutrition and Dietetics*. <https://doi.org/10.1111/jhn.13357>

Abstract:

Background

To improve the healthfulness of foods offered while accelerating the use of environmental sustainability practices, it is important to engage hospital food service operators in the adoption of such practices. The purpose of this study was to explore barriers, facilitators and best practices for implementing environmental sustainability standards in food service among veterans affairs (VA) hospitals in the United States.

Methods

We conducted an online survey with 14 VA hospital food service directors and then 11 qualitative interviews. The survey assessed motivations for initiating sustainability standards and included a self-rating of implementation for each of five standards: increasing plant-forward dishes, procuring and serving sustainable foods that meet organic/fair trade and other certifications, procuring and serving locally produced foods, reducing food waste and reducing energy consumption. Interviews were transcribed verbatim. Qualitative analysis, including coding of themes and subthemes, was conducted by two coders to determine barriers, facilitators and best practices for each of these five standards. Quantitative methods (counts and frequencies) were used to analyse the survey data.

Results

Participants had an average of 5 years of experience implementing sustainability standards. The top three motivators cited were reducing food waste, serving healthier foods and increasing efficiency or cost savings. Barriers revolved around patient preferences, contractual difficulties and costs related to reducing waste. Facilitators included taste testing new recipes that include more sustainable food options and easy access to sustainable products from the prime vendor. Best practices included making familiar dishes plant-forward and plate waste studies to prevent overproduction.

Conclusions

Although there were many barriers to implementation, food service directors had solutions for overcoming challenges and implementing food service sustainability standards, which can be tested in future sustainability initiatives.



10. UNITED STATES DEPARTMENT OF AGRICULTURE NUTRITION ASSISTANCE PROGRAMS DURING THE COVID-19 PANDEMIC: A SCOPING REVIEW PROTOCOL

Soldavini, J., Read, M., & Clay, L. (2023). United States Department of Agriculture nutrition assistance programs during the COVID-19 pandemic: A scoping review protocol. *PLoS One*, 18(7), e0288585. <https://doi.org/10.1371/journal.pone.0288585>

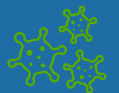
Abstract:

Objective: The goal of this scoping review is to examine the published research on federal nutrition assistance programs administered by the United States (U.S.) Department of Agriculture during the COVID-19 pandemic, in the U.S., U.S. territories, and tribal nations. The review will identify the scope of the available research and provide research and policy recommendations.

Introduction: The COVID-19 pandemic made individuals more vulnerable to experiencing food insecurity. Federal nutrition assistance programs help to address food insecurity and have been rapidly adapting to meet food and nutrition needs among affected communities during the COVID-19 pandemic. It is important to understand the scope of the current research on this topic to help inform future research, practice, and policy recommendations.

Inclusion criteria: This review will include studies focused on federal nutrition assistance programs administered by the U.S. Department of Agriculture during the COVID-19 pandemic. The scoping review will consider all primary research designs.

Methods: Pubmed, CINAHL, Scopus, and Proquest's Health Management databases will be used for the literature search. Only articles published in English since March 1, 2020 will be considered. Titles/abstracts followed by full-text articles will be reviewed to determine which articles meet the inclusion criteria and should be included in the review. Data will be extracted from each included article using a data extraction template in Covidence that will be developed by the study team. Data extracted will include information on key findings related to the review questions. At each step, two independent reviewers will be assigned to each article. Data will be summarized and presented in tables, charts, and narrative summary.



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