A Scoping Review of the Supplemental Nutrition Assistance Program (SNAP) and Its Effect on Food Security

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Introduction

Food insecurity remains a persistent challenge in the United States despite decades of federal investment in nutrition assistance (Rabbitt et al., 2023). The Supplemental Nutrition Assistance Program (SNAP), the nation's largest food assistance program administered by USDA, is designed to stabilize food access for low-income households, particularly during periods of economic disruption such as the Great Recession and COVID-19 (Ratcliffe et al., 2011; Tiehen, 2021). Yet in 2021, 39.9% of SNAP households remained food insecure and more than 10 % of U.S. households experience food insecurity in most years, underscoring enduring gaps despite SNAP and other safety net program's reach (Schanzenbach, 2023). While previous studies have reported SNAP's impact on food security, findings cannot be easily compared due to methodological challenges and measurement heterogeneity (Andreyeva et al., 2015; Arteaga & Wilde, 2023). This fragmentation limits the ability to draw clear, evidence-based conclusions about SNAP's effectiveness. To address this gap, this scoping review synthesizes peer-reviewed research on SNAP's effects on food security, mapping key study characteristics and summarizing the evidence of SNAP participation on food security outcomes in the United States.

Conceptual Framework

The review used a conceptual framework developed from the USDA's foundational work on food security (Bickel et al., 2000; Hamilton et al., 1997). The framework conceptualizes food security as progressing from economic access to effects on food security status, partial effects on psychological stress, and coping behaviors adopted out of necessity, such as skipping meals or buying lower-quality food. This framework allowed us to systematically summarize and compare studies assessing SNAP's effectiveness on food security, despite differences in measurements, income thresholds, and food security levels. By mapping studies into a common structure, the framework supported consistency in interpreting SNAP outcomes across diverse methodologies.

Methodology

This scoping review followed the methodological framework by Arksey and O'Malley (2005) and reported in accordance with PRISMA-ScR guidelines (Tricco et al., 2018). It systematically searched five databases: PubMed, Food Science and Technology Abstracts, Web of Science, CAB Abstracts, and AGRICOLA, from which 2,495 records were identified. After removing 1,025 duplicates, 1,470 titles and abstracts were screened, and 111 full texts were reviewed by two reviewers. Forty-four peer-reviewed studies met the inclusion criteria. The review included empirical studies conducted in the United States that examined SNAP's effectiveness on food-security outcomes. Studies were excluded if they focused on other federal programs, did not evaluate food-security outcomes, grey literature such as dissertations, conference abstracts and unpublished reports or studies conducted outside the U.S. A structured coding protocol captured study characteristics such as publication year, data types & sources, instruments, Federal Poverty Level (FPL) thresholds etc., and in line with conceptual framework we categorized into food security status, economic constraints, and psychological/social factors. Initial inter-rater reliability reached 92.6%, and all discrepancies were discussed and resolved, resulting in 100% consensus before analysis. Descriptive analyses summarized study characteristics and outcomes related to SNAP's effects on food security status. Microsoft Excel was used to organize data, generate charts, and identify patterns.

Findings

Across the 44 included studies, most publications (n=17; 38.64%) appeared between 2021 and 2025. Most studies (n=33; 75%) used secondary datasets, particularly CPS-FSS (n =12; 36.36%), NHANES (n = 4; 12.12%), Household Pulse Survey (n = 4; 12.12%), FoodAPS (n = 3; 9.09%), and SIPP (n = 3; 9.09%). Income thresholds varied widely, with 130% FPL (n = 15; 34.09%) and 185% FPL (n = 11; 25%) used most frequently, followed by 200% FPL (n = 7; 15.91%) and 250% FPL (n = 3; 6.82%). Food security was measured primarily using USDA's HFSSM tools, including the 18-item module (n = 12; 27.27%), the 10-item module (n = 9; 20.45%), 6-item module (n = 5; 11.36%), and Core Food Security Module (CSFM) (n = 6; 13.64%). Reference periods were ranging from 24 hours to 12 months. Variation in measurement scales and recall periods contributed to inconsistencies across studies. Consistent with the conceptual framework, studies examining SNAP's effects on food security status reported outcomes as percentage reductions in food insecurity rates (n = 11; 25%), improvement in USDA's food security levels (n = 9; 20.45%) and in food security scores (n = 3; 6.82%). Across these outcome measures, (n = 20; 45.45%) studies were classified as "mixed," meaning that SNAP outcomes were reported using more than one food security measure, including percentage-based changes, food security levels, and food security scores. Severity-focused analyses indicated that very low food security (n = 15; 34.09%), combined low and very low food security (n = 9; 20.45%), and mixed (n = 5; 11.36%). In line with the conceptual framework, outcomes related to economic constraints such as spending patterns, income level and financial management and psychological stress or coping behavior (n = 22; 50%) such as shopping behavior, adjustments in eating etc., were reported more frequently than economic factors alone (n = 10; 22.73%) and psychological stress or coping behavior alone (n = 7; 15.91%).

Conclusion and Implications

Publication trends showed increased activity between 2021 and 2025 across the 44 included studies, during which several SNAP policies were implemented such as changes in emergency allotments and Online Purchasing Pilot (Jones et al., 2023; Sanjeevi & Monsivais, 2023). Researchers used secondary data, reflecting the availability of national surveys that collect food security data. FPL patterns indicated that lower thresholds were most frequently used to focus on low-income population. SNAP serves as a stabilizing safety net effect by reducing food insecurity prevalence and showing improvements in food security scores and levels. SNAP outcomes are also shaped by the interaction of economic constraints and psychological stress or coping behaviors that are not fully captured by aggregate food security measures. These inconsistencies highlight the urgent need for standardized measurement practices to improve the precision of future evaluations. Ultimately, these results offer educators, researchers, and policymakers a clearer understanding of SNAP's role, pointing to opportunities for more rigorous evaluation, consistent program design, and targeted efforts to address persistent inequities.

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