

P206 (continued)

2015 were products, creameries, issues, positive, and outbreak.

Conclusion: Social media could be a valuable communication avenue to communicate future foodborne illness outbreaks and food recalls.

Funding: None.

P207 Using Formative Research to Develop the HappyHealthy Social Marketing Campaign

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Background: Across the nation, SNAP-Education direct nutritional education efforts have resulted in SNAP recipients making healthy dietary choices and food purchases, using safe food preparation skills, and increasing physical activity. To reinforce direct nutrition education efforts, SNAP-Education implementing agencies use social marketing as a broad-based approach to nutrition education. The research described here was conducted to inform the development of a statewide social marketing campaign that targeted SNAP eligible families in Mississippi (MS).

Objective: Formative research was conducted to explore perceptions of healthy eating including triggers and barriers to healthy eating, to understand decision patterns when choosing food and shopping for food, and to assess types of nutrition information needed and sought.

Study Design, Settings, and Participants: In 2016, 127 low-resource mothers participated in 18 focus groups. Respondents were recruited via telephone from a list of MS SNAP benefits recipients. Focus groups were recorded and transcribed.

Measurable Outcome/Analysis: Thematic analysis was conducted to determine the behavioral target(s) of social marketing messages; to identify products, services, and incentives to promote adoption of the behavioral targets; and to determine communication efforts to disseminate campaign messages and promotion.

Results: Increase physical activity, shop for healthy foods on a budget, prepare meals at home, and have pride in food and family were determined as target behaviors. Easy-to-make recipes and cooking items were identified as behavioral reinforcements. Preferred delivery channels included mass media (eg, television commercial), social media (e.g., Facebook, Twitter), and promotional media (e.g., educational incentive items).

Conclusion: Findings informed the HappyHealthy statewide social marketing campaign developed by the Mississippi State University Extension Service Office of Nutrition Education. Implementation of HappyHealthy began in 2018 and will continue throughout 2019. A description of the formative research process that resulted in this social marketing campaign could help educators in other states/locations who are interested in developing a social marketing campaign.

Funding: None.

P208 Serum Markers of Fruits and Vegetables are Low in Low-Income Adults in the United States

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Background: Poverty alters food selection for calorie dense foods to the detriment of nutrient dense foods such as fruits and vegetables (FV).

Objective: Serum carotenoids concentrations were analyzed to ascertain relationships with income level among the United States population.

Study Design, Settings, Participants: The phlebotomy sample of the United States National Health and Nutrition Examination Survey (NHANES) 2003-2004 was analyzed to study the relationship between income level and blood serum markers from FV. Data from 10,952 adults, comprising 5,478 men, and 5,474 women were analyzed for this study. Multivariable regression models were used to study the associations between income level, defined by the United States Bureau of the Census, and serum carotenoids concentration. Those categorized as low-income had income <130% of the federal poverty threshold, whereas those with income ≥130% of the federal poverty threshold were categorized as high-income.

Results: Compared to high-income adults, low-income adults had significantly lower serum concentration of α carotene (mean \pm SE) (3.3 ± 0.1 vs 4.2 ± 0.7), β carotene (13.4 ± 0.3 vs 16.6 ± 0.2), lutein (8.8 ± 0.1 vs 10.6 ± 0.1) and lycopene (19.4 ± 0.2 vs 21.7 ± 0.2) (all $P < .001$). Low-income adults were significantly more likely to have serum concentration that was below the median [Odds Ratio; 95% CI]: α -carotene (1.77; 1.41-2.25), β -carotene (1.62; 1.28-2.04), lutein (1.52; 1.12-2.17), and lycopene (1.42; 1.13-1.79), all $P < .001$.

Conclusion: Being low-income associates with lower serum concentration, and possibly low consumption of carotenoid-rich foods such as FV. Food assistance for low-income adults should include options that improve consumption of carotenoid-rich foods such as FV.

Funding: None.

Nutrition Education Program Design Implementation and Evaluation

P209 Culinary Medicine Program Improves Physician Resident's Nutrition Knowledge and Communication Skills

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Objective: To evaluate the efficacy of a culinary medicine interactive class for physician residents.

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