P51 Portion Distortion Degree (PDD) Scale: Development, Validation and Applications

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Objective: To develop a scale that combines all the drivers of portion distortion into one. Since literature has shown various ways that portion distortion may be expressed in individuals (causing future eating problems including overweight and obesity), this research can provide new ways to for public programs to detect causes of obesity and encourage productive weight loss.

Study Design, Setting and Participants: Item generation was made using in-depth interviews with 8 participants recruited through snowball sampling. Scale dimensionality and internal consistency (exploratory factor analysis) and scale confirmation (confirmatory factor analysis) was performed with 126 participants recruited from mTurk for monetary compensation. At the end of the survey portion choice (Subway sandwiches: Footlong, six inches) was used to measure current portion distortion.

Outcome, Measures and Analysis: Proposed PDD scale was tested for internal consistency, dimensionality, and criterion validity. Exploratory factor analysis (EFA) using principal axis factoring (PAF) with varimax rotation in SPSS. Afterwards confirmatory factor analysis (CFA), using AMOS with maximum likelihood estimation provided construct and discriminant validity tests. Subsequently PDD scale was tested using a logistic regression determining PDD effect on portion choice.

Results: Four dimensions of the scale were found, all with Cronbach alpha >0.8, CFA shows successful goodness of fit (RAMSEA=0.065, CMIN/DF=1.53). Results of the logistic regression showed individuals who choose smaller portions have significantly less PDD ($p > 0.01$).

Conclusions and Implications: PDD scale reaffirm that portion distortion is driven by different factors and not only economic utility. Furthermore, the usage of the PDD scale can help to measure individual proneness to portion distortion and asses its obesity risk.

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P52 A Systematic Review of U.S. Food Retailers' Perspectives Using Behavioral Economic Domains, 1980 to 2016

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Objective: Understanding the economic opportunities and barriers from the retailer (i.e., owners, managers,

and employees) perspective to support effective partnerships and financial stability of involved businesses is imperative in order to inform health promotion interventions targeted at low-income consumers, and is a scope lacking in current food environment research. To examine food-retailer perspectives respective to choice architecture and marketing strategies used to encourage healthy food purchases, in order to understand factors that influence intervention feasibility and effectiveness.

Study Design, Setting, Participants: A systematic literature review using the Preferred Reported items for Systematic Reviews and Meta-Analysis guidelines. United States food environment research inclusive of retailer perspectives from years 1980-2016 were included per review criteria.

Outcome Measures and Analysis: Perspectives were categorized using eight behavioral economic strategies (place, profile, portion, pricing, promotion, priming, prompting, and proximity). Co-investigators reviewed the outcomes data and the U.S. Department of Agriculture's nutrition evidence library checklist for study quality was used.

Results: Of included articles ($n=22$), most perspectives describe factors that may influence the practical application of behavioral economic strategies such as community and/or economic context of food-retail store, interpersonal or community relationships, store or supplier policies, space and structures, and the convenience, demand, profitability, and shelf-life of unhealthy products. A smaller results subset describes beneficial strategies implemented, such as taste promotions or food displays, from the retailer perspective.

Conclusions and Implications: Researchers need be cognizant of opportunities and barriers specific to the implementation of behavioral economic strategies in the food-retail context in order to design sustainable and realistic interventions to influence consumer healthy food purchases.

Funding: Supplemental Nutrition Assistance Program - Education

P53 Association Between Food Shopping Motivators and Home Food Environment

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Objective: This study examines whether the home food environment is related to food shopping motivating factors such as taste, cost, convenience, weight control, and nutrition.

Study Design, Settings, Participants: This is a secondary analysis of a cross-sectional survey ($n=123$) of Supplemental Nutrition Assistance Program (SNAP) recipients.

Outcome Measures and Analysis: Participants were surveyed about their home food environment, factors

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that motivate them while shopping, and food security status, using questions from the Perceived Nutrition Environment Measure Survey (NEMS-P) and the 6-item US Household Food Security Survey. A composite home food environment score was derived by summing availability and accessibility to healthy food and deducting unhealthy access and availability (range -15 to 19, higher score means healthier home food environment). Analysis included multivariate linear regression models with the predictors and adjusting for demographic variables. Since this is an exploratory analysis, significance was set at $p < 0.10$.

Results: Being motivated by nutrition when shopping and food security were positively associated with the home food environment ($\beta=4.67$, $p = 0.028$ and $\beta=1.45$, $p= 0.058$ respectively). After controlling for socio-demographic characteristics, food security status was no longer significantly associated with improved home food environment but nutrition motivation remained significant ($\beta=4.89$, $p = 0.034$).

Conclusion and Implications: Findings indicate that low-income individuals who consider nutrition important when grocery shopping have a significantly healthier home food environment. Nutrition education efforts to increase perceived importance of nutrition when grocery shopping may be a useful tool to improve the home food environment.

Funding: USDA

P54 Community-based Policies and Support for Free Drinking Water in U.S. Municipalities

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Objective: We examined community-level characteristics associated with free drinking water access policies in U.S. municipalities.

Study Design, Setting, Participants and Intervention: This cross-sectional study used data from a nationally representative survey of city managers/officials from 2,029 local governments conducted in 2014.

Outcome Measures and Analysis: Outcome measures were four policies regarding free drinking water access. Explanatory measures were population size, rural/urban status, census region, poverty prevalence, education, and racial/ethnic composition. We used multivariable logistic regression to test differences.

Results: For community planning, 56.3% of local governments had at least one plan with a written objective to provide free drinking water in outdoor areas; municipalities in Northeast and South region and municipalities with 50% of non-Hispanic (NH) white were less likely to have a plan. For existing policies and funding, 59.2% had policies or budget provisions for free drinking

water in parks and outdoor recreation areas. Municipalities in Northeast and South region were less likely to have such a policy or budget provision. For future community development, 9.3% provided incentives for placing drinking fountains in outdoor publicly accessible areas. For local building standards, 7.7% had a municipal plumbing code drinking fountain standard that differed from the statewide plumbing code; municipalities with lower proportion of NH whites were more likely to have it.

Conclusions and Implications: Free drinking water in parks and outdoor recreation areas are supported by written plans, a policy or budget provision in over half of municipalities. Drinking water promotion through development incentives or a more robust municipal plumbing code was rare. Encouraging the consumption of water instead of sugary drinks is a strategy to improve healthier diets and reduce disease risk.

Funding: None

P55 Development of a Quantitative Measure of Community Readiness to Change for Health and Wellness

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Objective: Recruiting community involvement in public health interventions is often met with varying degrees of success. Attitudes, resources, and leadership all impact a community's readiness to effect change. Assessing community readiness for change is vital to successful adoption of any health or wellness initiative. Past efforts in measuring community readiness have been largely limited. This study's objective is to develop an instrument capable of measuring the attitudes and ability of a college campus community towards adopting change in the realm of health and wellness.

Study Design, Setting, Participants: The Readiness for Community Wellness Survey was adapted from the Children's Healthy Living Program's Readiness to Collaborate Survey. The Delphi Technique will be used to recast measured domains to fit the needs of a college campus community health and wellness intervention. Cognitive interviews will be used to determine face validity. Survey measurements will then be evaluated against a modified Community Readiness Survey developed by the Minnesota Department of Human Services and Healthy Campus Environmental Assessments to determine external validity of the survey. Community and expert panel samples will be drawn from 8 U.S. college campuses involved with the USDA sponsored community-based participatory research project Fruved.

Results: Initial survey development has been completed. Six specific domains were identified as areas to assess for community readiness. Refinement and testing are currently in progress.

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