P11 (continued)

Background (Background, Rationale, Prior Research, and/or Theory): Descriptions of college students' perception of the healthfulness of their campus can inform the development of tailored nutrition education programs.

Objective: To develop an assessment tool, Behavior Environment Perception Survey (BEPS), measuring college students' perception of the healthfulness of different domains of environmental influencers of health.

Study Design, Setting, Participants, Intervention: A sequential process of measurement development included item generation by experts at seven universities using a pool of existing items and item sorting based on domain/construct. Then, college students participated in cognitive interviews and a pilot survey administration. Finally, survey field testing data were used for confirmatory factor analysis and reliability testing to construct the final questionnaire. Analyses used SPSS and EQS.

Outcome Measures and Analysis: Item generation from experts at seven universities resulted in 100 items, reduced to 93 items based on sorting. Items were eliminated based on content analysis of cognitive interviews ($n = 120$); identification of misinterpreted items and exploratory factor analysis of pilot survey data ($n = 724$ at 6 universities; elimination of cross-loading [$> .30$] or weak loading [$< .40$] items). The field test ($n = 2,724$ at 6 universities) included the refined 31-item measure which underwent confirmatory factor analysis and structural equation modeling.

Results: A 23-item, 5-factor structure was the best fit for the data ($\chi^2 = 3,462.15$, $df = 209$; CFI = .841; RMSEA = 0.076). The perceived healthfulness of the environment factors were: physical activity ($\alpha = .71$; 5 items), healthy eating ($\alpha = .85$; 5 items), mental health ($\alpha = .85$; 5 items), barriers to health ($\alpha = .70$; 4 items), and social influences ($\alpha = .73$; 3 items).

Conclusions and Implications: BEPS is a novel, brief instrument measuring college students' perception of the healthfulness of their environment. Strengths include: strong psychometric properties, breadth of constructs, and comprehensive instrument development process involving a large sample from seven different universities. Future steps include validation studies.

Funding: None.

P12 Food Security, Dietary Diversity and Glycemic Control Among Adults Diagnosed with Type 2 Diabetes in Malawi

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Background (Background, Rationale, Prior Research, and/or Theory): Juxtaposition of food insecurity

and Type 2 diabetes (T2DM), disproportionately higher than Sub-Saharan Africa, among adults in Malawi is not well understood along with its negative health implications.

Objective: To determine and compare food security and dietary diversity of adults with T2DM relative to glycemic control in urban (Lilongwe) and semi-urban (Kasungu) districts in Malawi.

Study Design, Setting, Participants, Intervention: A cross-sectional face-to-face survey was conducted from June to August 2017 in Lilongwe and Kasungu with a total of 428 adults diagnosed with T2DM; ($n = 288$ in Lilongwe and $n = 140$ in Kasungu).

Outcome Measures and Analysis: Data included: demographic characteristics, glycosylated hemoglobin (HbA1C) to assess glycemic control, Household Food Insecurity Access Scale (HFIAS) questionnaire was used to calculate the HFIAS score, and 24-hour recalls were used to derive Individual Dietary Diversity Scores (IDDS). Independent t-tests (IBM SPSS version 24) were used to determine if there were differences in IDDS and food security based on HbA1C as well as location.

Results: Overall, 60.3% had higher than recommended ($>8\%$) HbA1C levels. Subjects were primarily: female (69.4%), ≤ 60 years (79.6%), married (77.6%), and 49.6% only attained grades 1–8 education. Significantly higher HFIAS scores (moderate to severe) were evident in those with HbA1C $>8\%$ ($P < .05$). There were no significant differences between those who were mildly and moderately to severely food insecure in both locations. Participants with HbA1C $>8\%$, had mean IDDS = 4.80 ± 1.38 , indicating low to moderate dietary diversity. Lilongwe participants had significantly ($P < .05$) higher mean IDDS (5.03 ± 1.39), but still in low to moderate dietary diversity range.

Conclusions and Implications: Both food insecurity and dietary diversity are a concern among adults diagnosed with T2DM, the majority of whom are also not achieving target HbA1C levels. Therefore, more in-depth dietary quality and food access exploration is needed to inform nutrition education and policy efforts for adults with T2DM in Malawi.

Funding: USAID, Borlaug Higher Education for Agricultural Research and Development (BHEARD), Michigan State University.

P13 How Does Place Influence Children's Willingness to Try New Vegetables?

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Background (Background, Rationale, Prior Research, and/or Theory): Vegetable consumption is essential in a healthful diet. Among children aged 2–18,

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P13 (continued)

consumption of vegetables has remained constant over time and below recommended levels.

Objective: The study purpose is to describe how willingness to try a new vegetable differs by place (friend's house, school, home) based on vegetable preference.

Study Design, Setting, Participants, Intervention: Baseline data were analyzed from the NU-HOME study, a randomized trial to prevent childhood obesity. Participants completed data collection in a rural Minnesota community (2017). Children ($n = 60$) were predominantly female (62%), with a mean age of 8.95 years ($SD = 0.89$). Four items from a vegetable neophobia scale were analyzed; one assessed how much the child likes vegetables, and three assessed willingness to try a new vegetable in three different locations. Liking vegetable variables was recoded as binary ("liked very much" vs. "liked a little/-didn't like at all").

Outcome Measures and Analysis: Chi-square and Fisher's exact test examined associations between liking vegetables, and willingness to try new vegetables in the three locations.

Results: Only 38% of children reported liking vegetables "very much" compared to fruit (87%); thus, analyses were limited to vegetable items only. Compared to children who reported liking vegetables, children who reported not liking vegetables were less likely to try a new vegetable at a friend's house (91% vs. 46%, $P = .003$), or at school (87% vs. 62%, $P = .028$). However, no significant difference was observed in willingness to try a new vegetable at home between children who like vegetables, and those who do not (87% vs. 73%, $P = .12$). There were no differences in associations by gender or age.

Conclusions and Implications: Children who reported not liking vegetables were more likely to try a new vegetable at home than other locations. Therefore, efforts to promote vegetables should target the home, and interventions promoting at-home cooking can optimize introduction of new vegetables.

Funding: NIH.

P14 Impact of Health at Every Size Curriculum Module on Weight Attitudes of College Students

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Background (Background, Rationale, Prior Research, and/or Theory): Weight bias is pervasive in Western society. Health at Every Size (HAES) provides an alternative to weight-centric approaches and may help to alleviate weight stigma.

Objective: The purpose of this study was to evaluate whether a HAES curriculum module would impact weight attitudes of college students.

Study Design, Setting, Participants, Intervention: Quasi-experimental design using pre- and post-testing was

used to compare attitudes among students in a personal health course. Students in 11 sections of the course received the usual weight management module (comparison) while students in the other 11 sections received a 2-day HAES-focused module (intervention). The HAES module included information about HAES principles, mindful eating, comparison of dieting and non-dieting approaches to nutrition, and body positive self-talk.

Outcome Measures and Analysis: Attitudes were measured using the Health and Weight Attitudes Scale, an instrument measuring HAES attitudes. Independent t-tests were used to analyze differences in attitudes among the comparison and intervention groups, paired t-tests to analyze differences between pre- and post-tests, and ANOVA to analyze differences in gain scores among the groups.

Results: One hundred and ninety five college students participated in both pre- and post-tests. Attitudes at pre-test did not differ significantly between the intervention ($n = 109$) and comparison ($n = 86$) groups [$t(193) = -.08$, $P = .93$]. Comparison group scores did not change from pre- to post-test [$t(85) = .29$, $P = .77$] while the intervention group did have a significant change from pre- to post-test [$t(108) = -7.55$, $P < .001$]. At post-test, intervention group attitudes also differed significantly from the comparison group [$t(193) = -4.67$, $P < .001$]; the intervention group had significantly more positive attitudes at post-test [$F(1,193) = 32.43$, $P < .0001$].

Conclusions and Implications: Even a short, 2-day HAES curriculum module can increase positive attitudes of students toward HAES principles. Nutrition educators can optimize the impact of their instruction by incorporating HAES principles in their curriculum, even in small doses, to support body and size acceptance and improve attitudes about weight.

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P15 Modifiable Cardiovascular Risk Factors in a Population of University Undergraduates From South East, Nigeria

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Background (Background, Rationale, Prior Research, and/or Theory): Cardiovascular diseases (CVDs) are the leading cause of mortality and morbidity worldwide. The burden of the disease can be reduced by early identification and controlling of cardiovascular risk factors. Data on modifiable cardiovascular disease risk factors among young adult populations in Nigeria are scarce.

Objective: The study objective was to examine the prevalence of modifiable cardiovascular risk factors (MCRFs) among apparently healthy university undergraduates.

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