P17 (continued)

and children who were expressing their emotions about a food they like.

Conclusion: Preschoolers discussed positive and negative food-related emotions. Allowing children to discuss their emotions about food could be a useful strategy when adapting interventions aimed at improving children's food preferences and diet quality.

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Behavior and Education Theory

P18 A Test of Social Cognitive Theory on Fruit and Vegetable Intake in Indiana High School Students

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Background: Bandura's Social Cognitive Theory (SCT) is commonly used to inform nutrition interventions in adolescents, yet relatively few studies have tested the structural paths of the constructs that guide behavior. It is important to test theoretical models, so theory can better inform the design of useful interventions.

Objective: To test the structural paths of SCT on self-reported consumption of fruits and vegetables in adolescents.

Study Design, Setting, Participants: Cross-sectional survey data was collected from 1,104 high school Family and Consumer Sciences students in Indiana.

Measurable Outcome/Analysis: Participants completed a 40-item questionnaire with 3 items about intake of fruits and vegetables and 37 items from validated SCT scales that assessed nutrition-related self-efficacy, intentions, behavioral strategies, outcome expectations, outcome expectancies, situation, and social support. Structural equation modeling was used to test relationships between constructs in SCT and eating fruits and vegetables.

Results: There were 707 (64.1%) girls and 397 (35.9%) boys that completed the survey. There were 896 students who self-identified as White (81.2%), 66 as Black (6%), 45 as Asian (4.1%), and 98 as other (8.9%). Fit was good for the model (Comparative Fit Index = 0.90; Root Mean Square Error of Approximation = 0.06). Intentions ($\beta = 0.32$; $P < 0.001$) and behavioral strategies ($\beta = 0.18$; $P = 0.003$) directly affected intake of fruits and vegetables. Self-efficacy ($\beta = 0.37$; $P < 0.001$), social support ($\beta = 0.17$; $P = 0.001$), and outcome expectancies ($\beta = 0.34$; $P < 0.001$) positively influenced intentions, indirectly affecting behavior. Situation did not have a significant effect on intentions ($\beta = 0.04$; $P = 0.44$) or self-efficacy ($\beta = 3.96$; $P = 0.26$).

Conclusion: Behavioral strategies and intentions directly influenced consumption of fruits and vegetables. These findings suggest that interventions aimed at high school students will be more successful if they focus on directly targeting behavioral strategies and focus indirectly on improving intentions by increasing self-efficacy.

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P19 Associations Between Decline in Household Income and Dietary and Lifestyle Changes During the COVID-19 Pandemic

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Background: The coronavirus disease 2019 (COVID-19) pandemic has greatly affected employment and the work environment. Socioeconomic status is known to affect dietary habits.

Objective: To examine the associations between changes in household income and changes in diet, dietary behavior, and lifestyle.

Study Design, Settings, Participants: A cross-sectional questionnaire survey was conducted via the Internet in November 2020. The participants were 6,000 Japanese men and women (aged 20–64 years old) who were registered with a research company. After excluding participants with invalid responses, a total of 5,158 participants were included in the analysis.

Measurable Outcome/Analysis: The questionnaire included the following items: demographic characteristics; socioeconomic status; and changes in household income, diet, dietary behavior, and lifestyle since before the COVID-19 pandemic (November 2019) to the present (November 2020). Changes in household income and demographic characteristics and socioeconomic status were compared using the χ^2 test. The association between changes in household income and dietary habits was examined by multiple logistic regression analysis.

Results: Household income had decreased for 1,144 participants (22.2%). In this group, a high proportion were in their 50s, were high school graduates, and had household income under 2 million yen in 2019. Decrease in household income was negatively associated with vegetable intake, frequency of eating out, time spent on breakfast, and time spent exercising, and positively associated with frequency of drinking and time spent on lunch.

Conclusion: The results of this study suggest that decrease in household income during the COVID-19 pandemic was associated with expansion of economic disparities and changes in dietary habits, such as vegetable intake and mealtimes.

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P20 Characteristics and Eating Lifestyle of People Who Increased Family Meals During the State of Emergency Caused by COVID-19 in Japan

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Background: In April 2020, the Japanese government announced the first state of emergency for a month to prevent COVID-19. The measures taken during this period affect dietary patterns. Since people were requested to stay at home, the frequency of people eating with their family increased during this stage.

Objective: To examine the characteristics and changes in the eating lifestyle of people who increased family meals during the state of emergency.

Study Design, Settings, Participants: A cross-sectional study involving 6,000 individuals aged 20–65 years was conducted via an internet survey developed by a Japanese research company.

Measurable Outcome/Analysis: We compared the characteristics and changes of the eating lifestyle of participants before and during the state of emergency. Chi-squared tests were used to compare 3 groups: people who increased, not changed, and decreased family meals during the state of emergency.

Results: A total of 1,293 (21.6%) participants ate more with their families during the state of emergency. Compared to people who decreased or not the changed frequency of family meals, people who increased the frequency of family meals had a higher level of education, were female, were living with someone, and/or had a higher household income in 2019 (all $P < 0.001$). They also ate a more nutritionally balanced diet, vegetables, and fruits, and felt that they changed to a healthier eating lifestyle during the state of emergency (all $P < 0.001$). Furthermore, they were more likely to cook more and spend more at dinner and were less likely to eat out with their friends (all $P < 0.001$).

Conclusion: Although the state of emergency was difficult for the entire population, people who ate more with their families during this period had healthier eating habits.

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P21 College Students Attending Online Programs Have Lower Rates of Food Insecurity than Residential Students

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Background: Residential students living off-campus report greater food insecurity than those living on

campus. Distance education programs are becoming popular and provide a way to continue one's education from home. The food security status of students completing their programs online is unknown.

Objective: To assess food security among college students by program type- residential or online.

Study Design, Settings, Participants: Cross-sectional study, students aged 18 years or older, attending a large Southern university completed an online survey in 2019.

Measurable Outcomes/Analysis: Food security status was assessed using the Adult Food Security Survey Module and students were classified as either food secure or insecure. Students belonged to either a residential or an online program. Binary logistic regression analysis was used to determine whether food security status differed by program type while adjusting for age, sex, race/ethnicity, family financial support, receipt of financial aid, and status as a first-generation student. Demographic and financial differences associated with food insecurity were compared by program type.

Results: Among students ($n = 2,819$), 43.1% were food insecure and 9.8% were online students. Food insecurity prevalence among the residential students was significantly higher than students obtaining their degree online (44.3% vs 32.6%, OR = 2.6, 95% CI = 1.8, 3.9). When compared to residential students, online students were more likely to be female (OR = 3.6, 95% CI = 2.2, 6.1), older (OR = 1.2, 95% CI = 1.1, 1.2), married (OR = 5.3, 95% CI = 3.5, 8.0), employed full-time (OR = 7.7, 95% CI = 4.5, 13.0) and less likely to receive financial aid (OR = 0.5, 95% CI = 0.4, 0.8) and family support (OR = 0.6, 95% CI = 0.4, 0.9).

Conclusion: The prevalence of food insecurity among students in this sample is twice as high as that of the state and nation. However, students in an online program may be more food secure compared to residential students. Further studies are needed to assess factors that may be associated with food insecurity among online students.

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P22 COVID-19 Impacts on Self-Reported Food Safety Behaviors in Florida Youth

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Background: Measures to protect against the spread of COVID-19 include guidance on personal and environmental hygiene. Some guidelines related to COVID-19 directly align with or have similarity to evidence-based food safety practices (FSP) taught in nutrition education classes, including handwashing and washing produce before eating.