New Highs in Iodine Deficiency Prevalence Among Children: Implications for Growth and Development

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Background: Adequate iodine nutrition is essential to the development of the brain and physical growth of children. Vulnerable age groups remain at greater risk of iodine deficiency which warrants continuous monitoring of its prevalence.

Objective: To provide national-level estimates of the prevalence of iodine deficiency among children and to report any predisposing dietary factors in this group.

Study Design, Settings, Participants: We analyzed the dietary and laboratory datasets from 3,402 children ages 2–10 years who participated in the US prepandemic National Health and Nutrition Examination Surveys 2017-2020 to meet the above objective.

Measurable Outcome/Analysis: Urinary iodine concentration (UIC) was used to assess iodine nutritional status. Descriptive and inferential statistics were used to estimate deficiency prevalence, differences between groups, and relative risks.

Results: The mean UIC was 143.5 μg/L. Overall, 27.8% of the children were iodine deficient (UIC<100 μg/L), of which 9.5% were severely iodine deficient (UIC<50 μg/L). The prevalence of iodine deficiency differed between boys (25.0%) and girls (30.7%), especially in severe iodine deficiency rates: boys (6.2%) and girls (12.8%), p=0.001. Girls were more likely to be severely iodine deficient than boys, relative risk: 1.80; 95 CI: 1.20 - 2.70, p=0.005. Type of cow milk consumed regularly, adding salt at the dining table, income, and race/ethnicity did not associate with the children's iodine nutritional status.

Conclusion: The prevalence of iodine deficiency among children is excessively high. Girls experience higher rates of iodine deficiency than boys. There is need to re-focus nutritional interventions to improve children's iodine nutritional status.

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Perception of NUEVA (Nutrition for Underserved Elders via Application) Usability During Alpha-Testing

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Background: Older adults (60 years+) have unique nutrition needs and circumstances. To address their individual requirements, many technological innovations are emerging to provide the necessary resources for this largely underserved population. To enhance participation in the senior nutrition programs, a multifunctional app, NUEVA, was created to optimize recruitment, assessment, nutrition intervention, and the participant experience. The development was informed with a user-centered design (UCD) framework including collaboration with community partners associated with senior nutrition programs.

Objective: To complete initial or “alpha” testing of the NUEVA app with community partners.

Study Design, Settings, Participants: A qualitative study with focus groups was conducted in Central Texas. Focus group participants included leaders of senior nutrition programs, food banks, and food delivery volunteers serving older adults in the Central Texas area. Focus groups were conducted over Zoom and followed a semi-structured guide that covered technology usage. Additionally, a Think Aloud methodology was used to assess participants real-time feedback while navigating NUEVA. Recordings were transcribed and checked for accuracy.

Analysis: Qualitative analysis included the review of summary sheets, peer debriefing, and coding to identify desired key features of NUEVA and barriers or facilitators related to usability of the app.

Results: Community partners engaged in focus groups (n=4 groups). Participants provided insights about successful technology adoption and barriers to technology usage in senior nutrition program operations. Facilitators of programmatic operations included opportunities for NUEVA to improve, such as recruitment, screening, assessment, meal selection, greater informed client outreach and increased ways to address nutrition security. Group discussions identified possibilities to enhance NUEVA for the older adults and operation use, such as technological concerns of the older adult user and staff, including data security.

Conclusion: Findings inform the development of NUEVA, including the nutrition education and additional desired modules, before beta testing with user groups. Furthermore, this community-based approach utilizing UCD may be a valuable model for leveraging technology to develop impactful solutions for older adults.

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Skin Carotenoid Status May Provide Insight Into Overall Diet Quality in Adolescents

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Background: Demonstrated by a low consumption of healthful foods like fruits and vegetables (FV) and an over-consumption of unhealthy foods like sugar-sweetened beverages, adolescents adhere to recommendations within the Dietary Guidelines for Americans (DGA) the least across all age groups. Promoting adherence to the DGA is vital for adolescents, since many behaviors established during adolescence may transpire into adulthood. Assessing diet quality (DQ) is important for the development of effective dietary interventions; however, there is no objec-

Continued on page S57
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tive marker of overall DQ and self-reported DQ measures have limitations. Since FV consumption, an important component of overall DQ, may be objectively measured via skin carotenoid status (SCS), measuring SCS may provide insight into overall DQ, thus improving DQ assessments and dietary interventions.

Objective: The objective of this study was to determine whether SCS may be useful for providing insight into overall DQ in adolescents.

Study Design, Settings, Participants: This cross-sectional study was conducted in the spring and fall 2021 semesters at four high schools in Florida. Participants (n=310) completed a demographic questionnaire and the Short Healthy Eating Index food frequency questionnaire. Their SCS was measured via resonance Raman spectroscopy (Veggie Meter®, Longevity, Inc) by scanning the index finger and recording the average of three scans.

Measurable Outcome/Analysis: Pearson’s R correlations were used to examine the relationship between individual food group consumption and SCS in efforts to determine the relationship between overall DQ and SCS. Frequencies were used to report demographics.

Results: Most adolescents were White (181, 58.4%), female (162, 52.3%), and 15 years old (80, 25.8%). SCS positively correlated with self-reported whole fruit (R=0.132, p=0.020), fruit juice (R=0.118, p=0.039), green vegetable (R=0.127, p=0.026), legume (R=0.133, p=0.019), and seafood (R=0.134, p=0.018) consumption. SCS negatively correlated with self-reported added sugar (R=-0.113, p=0.001) and saturated fat (R=-0.113, p=0.046) consumption.

Conclusion: Since many adolescents do not adhere to nutrition recommendations within the DGA, and given the subjectivity of self-reported DQ assessments, SCS may be useful for providing insight into overall DQ.

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Social Network Influence on Infant Feeding Decisions Among Latinx Women

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Background: Infant nutrition can contribute to lifelong physical and mental health. Current feeding interventions focus on the mother’s decision-making and neglect to explore the impact of the people around her. Little is known about how social networks influence feeding decisions.

Objective: To describe how social networks influence infant feeding decisions and practices for Latinx women in the United States.

Study Design, Settings, Participants: The study used convergent mixed methods with egocentric network mapping (N=30) and in-depth (n=15) with Latina mothers feeding 6-24 month-old children. Mean maternal age was 31.2 years and mean infant age was 12.4 months. Six mothers were born in the U.S., and 24 were immigrants. All the mothers initiated breastfeeding, and mean age for complementary food introduction was 5.7 months.

Measurable Outcome/Analysis: The qualitative analysis used a five-step reflexive thematic analysis process: familiarizing myself with the data; generating initial codes; generating initial themes; developing and reviewing themes, and refining, defining, and naming themes. The quantitative analysis used descriptive statistics, bivariate analysis, and linear regression to look at alter behavior and its association with breastfeeding duration. Finally, qualitative and quantitative findings were integrated.

Results: Thematic analysis generated three themes: the people I talk to; cultural influence goes both ways, and You just know. The average network size was 4.5 alters (range 0-21), and average density was 0.6. The participants who were immigrants had smaller networks (mean difference 5.75, 95% CI 2.31-9.19, p=0.002) and were more likely to rely on practices from their country of origin. Maternal intuition was an important piece of infant feeding decisions and there was not an association between the alter behavior and breastfeeding duration (parameter estimate =0.25, p=0.32).

Conclusion: Participants described social influences on their infant feeding decisions at several different levels. Alter behavior appeared to have less of an influence compared to other studies.

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Test-Retest Reliability of the MIND Diet Screener in Oldest-Old Adults

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Background: Dietary screeners offer quick yet valid indicators of adherence to healthful dietary patterns. The MIND (Mediterranean-DASH diet Intervention for Neurodegenerative Delay) diet screener assesses a dietary pattern associated with cognitive health and has been validated in older adults. However, its test-retest reliability in oldest-old adults at high risk of dementia and possible compromised recall requires investigation.

Objective: This study aimed to determine the test-retest reliability of telephone administration of the MIND diet screener in oldest-old (≥ 85 years) adults.

Study Design, Settings, Participants: Adults aged 85-105 were recruited in Florida through word of mouth, flyers, and social media posts. Participants completed the MIND diet screener by telephone interview at two timepoints, about 1-2 weeks apart. The 15-item MIND diet screener scores intake of green leafy vegetables, other vegetables, berries, nuts, olive oil, butter/cream, cheese, whole grains, fish (not fried), beans, chicken (not fried), red meat and products, fast food, pastries and sweets, and wine; total scores range from a theoretical 0 to 15.

Measurable Outcome/Analysis: Correlation of the MIND diet screener scores at two separate time points was determined. An acceptable test–retest reliability was set at r ≥ 0.7.

Results: Participants (n = 31; 90 ± 4 years) completed the study. The MIND diet screener required approximately

Continued on page S58