How Mealtime Behaviors Affect Children With Autism Spectrum Disorder: A Preliminary Analysis of a Randomized Control Trial

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Background: Problematic mealtime behaviors such as selective eating, not staying seated, or expelling foods are common among children with autism spectrum disorder (ASD). However, most children with ASD included in previous studies are older than 3 years.

Objective: To examine problematic mealtime behaviors of children with ASD under 3 years of age using baseline data of an on-going randomized control trial (RCT).

Study Design, Settings, Participants: Baseline data of an on-going RCT were compared to the reference data of typically developing children. Parent-child dyads enrolled in the Part C Early Intervention (EI) Services were recruited for the RCT study, and 37 parents of children with ASD under 3 years completed the mealtime behavior survey.

Measurable Outcome/Analysis: The Brief Autism Mealtime Behavior Inventory (BAMBI) questionnaire, which covers three sub-domains (Limited-Variety; Food-Refusal; Features-of-Autism) was used. A higher score indicates more mealtime behavioral issues. Descriptive statistics and one-sample t-test using reference values from typically developing children for total problematic mealtime behavior score and sub-domain scores were performed for data analysis.

Results: The total problematic mealtime behavior score (53.2±9.3) was significantly higher than the reference (32.5; p<.001), indicating significantly elevated problematic mealtime behaviors. There were significantly higher mean scores in Limited-Variety (10.5, 95% CI [8.4, 12.3]), Food-Refusal (6.4, (95% CI [5.1, 7.7]), and Features-of-Autism (3.7, 95% CI [2.7, 4.6]) sub-domains compared to the reference values (all p<0.001). More than 50% of the parents identified “dislikes certain foods and won’t eat them (88%);” “prefers the same foods at each meal (63%);” “do not accept/prefer a variety of foods (51%);” and “turning the face/body away from food (51%)” as a child’s significant mealtime problem.

Conclusion: Our findings indicate significantly elevated problematic mealtime behaviors among young children with ASD. It is important to address these needs through an EI program to reduce potentially negative nutritional and health outcomes. Our future study will examine whether the implementation of a nutrition education intervention will significantly improve mealtime behaviors can then be applied to a wider audience.

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How Much Is Too Much? Increased Formula Intake Linked to Rapid Weight Gain in Infants

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Background: Rapid weight gain (RWG) in infants increases the risk for obesity later in life.

Objective: The main goal of the study was to examine prevalence of RWG and its association with feeding practices among low-income infants.

Study Design, Settings, Participants: Mother-infant dyads (n=216) were recruited from a pediatric clinic that mainly served Medicaid recipients. Mothers were interviewed and 24-h feeding recalls were conducted at 6 and 9 months of infant’s age. Infant’s weight and length measurements were retrieved from the clinic’s medical records.

Measurable Outcome/Analysis: RWG was defined as a change of more than 0.67 standard deviations in weight-for-age z-score between 6 and 12 months. Utilizing NDSR program, total calorie intake, calories from formula/bottle feeding vs. breastfeeding vs. complementary foods, were calculated. Descriptives and bivariate t-test were conducted using SPSS v. 28.0.1.1(15).

Results: Of the total participants, 37% and 39% were African American and Latino, respectively. Most (79%) of the participants were receiving WIC. About 39% of infants (n=75) at 9 months were receiving breastfeeding (either fully or in addition to formula). About 23% of the infants had RWG between 6 and 12 months. In comparison, significant differences in total calorie and calories from formula were found at 6 and 9 months between those who had RWG versus who did not. For instance, at 6-month, average calorie intake among RWG group was 560.65 (+/−315.78) vs. no RWG group (392.53 +/−346.94; p<0.05). In examining the pattern, the frequency of formula intake was significantly higher while number of times breastfed was lower among RWG group compared to their counterparts ie, no RWG.

Conclusion: Formula feeding is associated with increased energy intake and RWG in late infancy. Continuation of breastfeeding post 6 months can help reduce the risk for RWG among infants. Nutrition education on formula and related feeding practices is vital in ensuring normal growth rate during infancy.

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Medical Residents That Learn to Assess Patients for Nutritional Deficiencies Can Better Mitigate Chronic Disease

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Objective: Integrating routine nutritional assessment into community medicine will improve outcomes: documenting pre/post patient nutritional status, 24-hour food recall, micronutrient testing, supplementation, patient nutrition education, nutrition-centered clinical follow-up. Residents require increased nutrition education for implementation.

Target Audience: Physicians, residents, community medicine teams; patients, their support systems.

Use of Theory or Research: The evidence is clear: good nutrition prevents and mitigates micronutrient deficiency diseases (eg, scurvy) and chronic illnesses. Community medicine should comprehend individual patients’ entire medical and nutritional status, to heal effectively.

Program Description: The presenter established a registry for nutritional deficiencies, documenting malnutrition at a FQHC serving Medicaid, Medicare and uninsured patients. Data collection and analysis continue. Multidisciplinary research, publication and collaboration will document these problems and address them. Medical Residents will be trained to put patient nutritional status at the center of community medicine.

Evaluation: Frequencies, t-tests, heat maps, other tools identify incidence and predictive factors; published databases of nutritional deficiencies will be used comparatively; physician implementation of clinical nutritional evaluation, remediation and documentation of outcomes will be investigated. Residents and patients will evaluate the new focus on nutrition in primary care via interviews analyzed using qualitative research techniques.

Results: Pilot data of 1600 patients, 325 (20%) were nutritionally deficient, 96 (6%) had clinical scurvy. Data corroborate multi-nutrient deficiency often associated with mental health concerns, and female gender. Patients’ chronic conditions were better addressed when micronutrient deficiencies were identified and supported with nutritional interventions. Residents’ pilot data revealed greater personal satisfaction when they could better identify easily correctable contributors to chronic disease. Additional data will be available at the conference. Registry data will further research and publication, providing additional rationale for augmenting nutrition education and training in primary care.

Conclusion: Clinical care revealed malnutrition; most patients have diets putting them at risk for poor health outcomes and unnecessary medications. A new nutrition- and prevention-centered training model for American primary and community healthcare is needed for physicians to better treat patients.

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Mixed Methods Investigation of Diet Quality and Nutrition-Related Behavior During Pregnancy

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Background: Suboptimal diet quality during pregnancy places mothers and babies at risk for adverse short- and long-term health outcomes. Improving prenatal dietary intake can support maternal health and place babies on a developmental trajectory that mitigates disease risk. Pregnancy is also described as a “teachable moment” whereby individuals have increased interest in making healthy choices for their baby. To cultivate healthier future generations, further information is needed to understand the complexities of nutrition behavior at this time. Data addressing prenatal dietary behavior is limited and primarily quantitative. Qualitative data would provide a more robust understanding of women’s experiences.

Objective: Examine prenatal diet quality and nutrition-related behavior among Iowa women using relevant theories, including Self-Determination Theory (SDT), the Health Belief Model (HBM), and Social Cognitive Theory (SCT).

Study Design, Settings, Participants: Thirty pregnant women between 12-34 weeks gestation, living in Iowa, were recruited via obstetrics and gynecological clinics.

Measurable Outcome/Analysis: Data collection was triangulated and included a three-day diet record (ASA24™), pre-interview survey (Qualtrics™), and a 60-minute, virtual, semi-structured interview. Quantitative data underwent descriptive analysis. Thematic coding of qualitative data was conducted by hand and using software (NVivo). Intercoder reliability was used to establish consistency and validity of findings.

Results: Participants’ dietary intake can be described as low in fruits and vegetables and high in carbohydrates. Further, nutritional quality is based on behavioral factors addressed in SDT, HBM, and SCT, including perceived benefits, risks, and barriers to healthy eating, self-efficacy, and external cues. For example, barriers included a lack of knowledge and support, as well as nausea and food aversions. Themes addressed women’s need for positive educational messaging and interventions focused on both mental and physical health.

Conclusion: Nutrition guidance provided to pregnant women is often lacking or described as “not helpful.” Given these circumstances, women are left to navigate conflicting advice from family, friends, and online resources. Scalable interventions that provide accurate educational and promote holistic well-being are needed to support healthy pregnancies.

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