Association Between Food Safety Awareness, Knowledge and Behavior and the Nutrition Status of Under-5 Children

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Background: Household-level food safety practices may have a long-term outcome on the nutrition and health status of under-five children.

Objectives: This study explores the relationships between caregivers’ self-reported food safety awareness, knowledge, and behavior and their young child’s (<5 years) nutrition status.

Study Design, Settings, Participants: In a cross-sectional study design, 661 caregivers from five Local Government Areas (LGAs) in Ibadan, Nigeria, were surveyed using an interviewer-administered questionnaire on their food safety awareness, knowledge, and behavior. Anthropometric measurements of the household’s index child (aged 6 –59 months) were also taken.

Measurable Outcome/Analysis: Variables for food safety awareness, knowledge, and behavior scores were selected using principal component analyses. The nutritional status of the children (Z-scores for weight-for-height (WAZ), height-for-age (HAZ), and weight-for-age (WHZ) were calculated. Also, the association between the scores and the children’s nutritional status was analysed using multivariate regression models. Covariates such as LGAs, caregivers’ age, household size, wealth index, and child’s gender and age were adjusted.

Results: High-level food safety awareness, knowledge, and behavior were reported by 86.4%, 82.9%, and 41.2% of the caregivers. Using WAZ, HAZ and WHZ that are ≤ -2, acute malnutrition (6.2%), chronic malnutrition (42.4%), and underweight (22.1%), respectively were prevalent among the children. However, their nutritional status was not associated with the caregivers’ food safety awareness, knowledge, and behavior scores. Wealth index, female gender, and caregivers’ age were positively associated with acute malnutrition. The child’s age, female gender, and wealth index were positively associated with chronic malnutrition. Furthermore, child’s age was negatively associated with being underweight, while caregivers’ age was positive associated with being underweight. The significance level was at P<0.05.

Conclusion: Self-reported food safety knowledge and awareness did not reflect caregivers’ behavior or directly associated with childhood malnutrition. Future studies should explore access to resources and other intermediate factors that may explain the linkage between childhood malnutrition and caregivers’ food safety awareness, knowledge, and behavior.

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Association Between Self-Reported Fruit and Vegetable Intake and Skin Carotenoids Among Pregnant Women

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Background: Fruit and vegetable (FV) consumption is associated with positive health outcomes in pregnancy. Veggie Meter® is a spectroscopy-based device that detects skin carotenoids and is validated with blood carotenoid levels but has not been utilized to examine FV intake in pregnant women.

Objective: To examine associations between skin carotenoids and self-reported FV intake in racially/ethnically and socio-economically diverse pregnant women.

Study Design, Setting, Participants: As part of a longitudinal investigation, data for this descriptive study were gathered during the third trimester of pregnancy (N=299 women; 29% Non-Hispanic Black, 16% ≤ high school, 21% food insecure). Skin carotenoids were assessed via Veggie Meter® (score range: 0-800). Validated questionnaires were completed to assess socio-demographics, family/household/neighborhood characteristics, FV intake (NCI FV Screener), and other variables.

Measurable Outcome/Analysis: Descriptive statistics, Pearson’s bivariate correlations to examine relationships between skin carotenoids, FV intake, and other variables. Independent t-tests and ANOVAs to assess mean differences by race/ethnicity, pre-pregnancy weight status etc.

Results: Self-reported FV intakes differed by race/ethnicity and food security status; no such differences were found in skin carotenoids (mean±SD = 258±91). Skin carotenoids were associated with total FV (r = 0.356; p <0.001) and V (r = 0.516; p < 0.001) intakes only among non-Hispanic White women. In the whole sample, women who were overweight/obese prior to pregnancy had lower skin carotenoids than women at a healthy weight (233±81 vs. 291±92; p <0.001). Age (r = 0.125; p = 0.035), income-to-needs ratio (r = 0.305; p <0.001), and perceived neighborhood healthy foods availability (r = 0.206; p <0.001) were positively correlated with skin carotenoids. Higher number of cigarettes smoked during pregnancy (r = -0.157; p = 0.008) was associated with lower skin carotenoids.

Conclusion: Discrepancies between self-reported intake and skin carotenoids in our sample highlight the need of utilizing more objective measures of FV intake if possible. Further research should delineate the associations between skin carotenoids, pre-pregnancy weight status, smoking, healthy foods availability by race/ethnicity and other characteristics to inform future FV-focused interventions targeting diverse pregnant women.

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