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ABSTRACT BOOK

Mediterranean diet (MD) is linked to enhanced quality of life. While both the American Cancer Society (ACS) and the World Cancer Research Fund/American Institute of Cancer Research (WCRF/AICR) recommend a diet rich in fruits and vegetables and low in fat and added sugar, BCS often struggle to meet these guidelines.

Methods: Diet of 22 BCS were qualitatively and quantitatively evaluated before and after a nutritional counseling intervention of 12 weeks (based on WCRF guidelines) using modified MEDIET questionnaire and 7-day food diary.

Results: Adherence score to the MD demonstrates suboptimal compliance both pre- (7.0 ± 1.8) and post-intervention (7.3 ± 1.9); however, notable improvements are observed in the consumption of specific food categories. Legume consumption significantly increase with median frequency rising from 1.0 (1.0–2.0) to 2.0 (1.8–2.7) times per week, while the intake of processed meats decreases significantly from 1.0 (0.8–2.0) to 0 (0.1–0.8) times per week. While fruit and vegetable intake meet the minimum recommended portions, there is a need to enhance awareness regarding their consumption. Data indicates a necessity to favor the increasing of fish intake, given the suboptimal level observed. Quantitative analysis reveals that macronutrient consumption generally conforms to Italian reference intakes. However, deficiencies are evident in fiber and specific micronutrients such as calcium and iron.

Conclusions: Data emphasize the pivotal role of nutritional counseling as a supportive tool for BCS but also underline the importance of targeted nutrition interventions to provide personalized, quantitative approaches. This comprehensive strategy would be essential to ensure the fulfillment of individualized nutritional requirements, thereby promoting optimal well-being and fostering favorable long-term health outcomes among BCS.

4.6.22. P.06.145 | Association of Nutritional Status with Early Childhood Caries in a Sample of Sri Lankan Children Aged 4–5 Years

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Background: Early childhood caries (ECC) is one of the most common communicable, intractable, and chronic oral health issues among children. Malnutrition of children is suspected to be a triggering factor for severe ECC (S-ECC). On the contrary, S-ECC can cause health and growth retardation triggered by insufficient food intake due to pain and abscesses associated with decayed teeth and premature teeth loss.

Methods: A cross-sectional analytical study was conducted to investigate this bidirectional association between nutritional status and ECC using 4 to 5-year-old 545 children attending the Dental Teaching Hospital, University of Peradeniya, Sri Lanka. After obtaining consent from the children's parents, oral examination and interviews were conducted and anthropometric measurements were taken. Binary and multinomial logistic regression analyses were applied to investigate the effects of independent variables on nutritional status and ECC status.

Results: The decayed, extracted, filled surfaces (defs) index and consumption of bakery items, ice cream, and tea with sugar were significant and positively correlated ($P < 0.05$) with poor nutritional status (Body Mass Index (BMI)-for-age Z-score < -2). Higher maternal education and birth weight had a protective effect on poor nutritional status

among children ($P < 0.05$). Weight-for-age and BMI-for-age, maternal education showed a significant negative correlation with the S-ECC status of children ($P < 0.05$). Consumption of bakery items, sugary spreaders, sugary soft drinks, biscuits/cookies, ice cream, chocolate, other sweets, and tea with sugar showed a significant positive association ($P < 0.05$) with the prevalence of S-ECC, as shown by odds ratios of >1.000 . In contrast to that, the consumption of fish and green leafy vegetables lowered the risk of having S-ECC occurrence ($P < 0.05$).

Conclusions: S-ECC is a potential risk factor for poor nutritional status while poor nutritional status is a potential risk factor for S-ECC among children.

4.6.23. P.06.146 | Behavior Effects of a Blueberry and Galacto-Oligosaccharide Diet on Sickness Induced Deficits in a Rodent Model

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Background: Cognitive decline is a symptom of aging and intervention through a well-characterized functional food is easy to administer, can be used continuously, and may provide broad protection against a variety of challenges. The dietary impact of blueberries and GOS on the gut microbiome and cognitive function was evaluated through a rodent model as a preclinical experiment.

Methods: Thirty-two Sprague-Dawley rats were randomly assigned to treatment/control diet and LPS/saline injection to measure the effect of these ingredients in a rodent model with an acute inflammatory response. The treatment diet consisted of 3% w/w blueberry powder and 3% w/w GOS. The control diet was matched in sugar and fiber content. Rats consumed diets for 11 weeks before 1 mL/Kg LPS or saline injections. Behavioral outcomes were measured through the Elevated Plus Maze (EPM), Morris Water Maze (MWM) and Forced Swim Task (FST). EPM and FST were analyzed through ANOVA.

Results: LPS exposed rats had higher sickness scores ($p < 0.001$) which did not differ by diet ($p = 0.30$). Rats treated with LPS exhibited more anxiety-like behavior and spent more time in the closed arms ($p = 0.0043$). Diet alone did not differ in time closed arms ($p = 0.151$). Treatment diet lowered the anxiety-like behavior caused by LPS based on closed arm time ($p = 0.0194$). LPS ($p = 0.252$) and diet ($p = 0.490$) alone did not influence reference memory from the MWM. The diet did not minimize the sickness deficits from the LPS on reference memory ($p = 0.098$). Differences in the gut microbiome between treatment groups will be discussed.

Conclusions: The results provide insight into the role of blueberries and GOS on cognition and gut in a model with systemic inflammation caused by LPS and will support future clinical trials and the investigation of the synergistic role of these foods on the gut-brain axis.

4.6.24. P.06.147 | Fatty Acid Regiodistribution from Krill Phospholipids

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Background: Several studies have shown that the bioavailability of polyunsaturated fatty acids of the n-3 family (n-3 PUFA) is higher when supplied in the form of phospholipids (PLs) than in the form of triacylglycerols. Additionally, intestinal absorption is higher for fatty acids in PLs sn-2 position.