

P22-013-23 Breastfeeding Support Provided by Lactation Consultants for Improved Breastfeeding Rates, Self-Efficacy, and Infant Growth: Systematic Review and Meta-Analysis Protocol

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Objectives: It is well established that breast milk offers numerous health benefits for mother and child. The World Health Organization and others recommend exclusive breastfeeding until the child is 6 months of age, with continued breastfeeding up to 1–2 years of age or beyond. Yet, these recommendations are met less than half of the time in high-income countries. Lactation consultants specialize in supporting families with breastfeeding and are a promising approach to improving breastfeeding rates. For lactation consultant interventions to be implemented widely as part of public health policy, a better understanding of their effect on breastfeeding rates and important health outcomes is needed. The overall objective of this systematic review is to evaluate the effect of lactation consultant interventions provided to women, compared to usual care, on breastfeeding rates (primary outcome), breastfeeding self-efficacy, and infant growth.

Methods: A search strategy will be developed to identify randomized controlled trials published in any language between 1985 and February 2023 in CENTRAL, MEDLINE, EMBASE, CINAHL, Scopus, and Web of Science. We will also perform a search of the grey literature and reference lists of relevant studies and reviews. Two reviewers will independently extract data on study design, baseline characteristics, details of the interventions employed, and primary and secondary outcomes using a pre-piloted standardized data extraction form. Risk of bias and quality of evidence assessment will be done independently and in duplicate using the Cochrane Risk of Bias tool and GRADE approach, respectively. Where possible, meta-analysis using random-effects models will be performed, otherwise a qualitative summary will be provided. We will adhere to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. This review was registered in PROSPERO.

Results: Not applicable.

Conclusions: This review will fill an important gap in the lactation support literature. The findings will be of importance to policymakers who seek to implement interventions to improve breastfeeding rates.

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This abstract has been withdrawn.

P22-015-23 Opportunities for Choice Architecture Interventions in School Food Settings in Low- and Middle-Income Countries: A Study Protocol

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Objectives: How a choice is presented or framed to an individual, the choice architecture, influences subsequent decisions. Supporting better food choice behavior is critical to addressing shortfalls in children's dietary intakes. Implementing nudges (changes to the choice architecture) within school food environments, where children choose between available options,

can influence what they select to eat. Such interventions are grounded in nudge theory and behavioral economics. Much of the evidence originates from high income countries and there is now a recognised need for research on the relevance/feasibility of nudges in diverse cultural and income settings. This study aims to examine the potential of choice architecture interventions in school food settings in low- and middle-income countries (LMIC) and add to the literature with evidence from the design and development of nudges for school food environments in diverse settings.

Methods: This study comprises three phases. First, a scoping review (encompassing grey literature) will consider food provision in schools, including at different food/beverage points, e.g. food vendors, tuck shops – with a focus on the extent of the choice available in different countries. This work will consider the choice architecture, potential utility of nudge-based approaches, and barriers/difficulties that proponents may face. Second, having identified two/three different settings in LMIC, stakeholder engagement will explore the potential for choice architecture interventions in schools. The third phase entails the design, development and evaluation of a nudge-based intervention comprising changes to the choice architecture within school food settings, context-specific and adapted to the identified schools and countries.

Results: N/A - study protocol abstract.

Conclusions: This study will add to the literature on nudges to complement school-based interventions to improve the school food environment, and will provide documented experience from more diverse settings. This will include how contextual factors may affect the implementation and effectiveness of nudges and how these can best be incorporated. The study will also provide a greater understanding of the scope and potential for nudges to promote better food choice from available options, for children in LMIC.

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P22-016-23 Study Protocol: Application of Novel Biomarkers To Measure Health Impacts of Anthropogenic Change in the Peruvian Amazon

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Objectives: The objective of this study to evaluate changes in dietary patterns and cardiometabolic disease risk profiles associated with the construction of the Interoceanic Highway through Peru's Southern Amazon. Though often overlooked, rural, remote regions of low and middle income countries (LMIC), such as Amazonia, face rising cardiometabolic disease risks from changing environmental, dietary and lifestyle factors associated with rapid anthropogenic changes (i.e. resource extraction, infrastructure development, and rapid urbanization).

Addressing these risks is crucial but has been limited by a lack of quantitative biomarkers to measure dietary intake. As non-invasive dietary biomarkers of the nutrition transition, carbon and nitrogen stable isotope ratios (CIR and NIR) are promising tools to fill this gap.

Methods: In 2023, trained local interviewers will follow-up households ($n = 545$) previously enrolled in two population-based studies in Madre de Dios, Peru. After obtaining informed consent, household surveys - including modules on demographics, food consumption, and health behaviors - will be administered. Anthropometrics, hair samples and fasting blood samples will be collected. Using random effects models, we will test the hypothesis that NIR is inversely, and CIR is positively associated with clinical cardiometabolic risk factors in adults by measuring hair NIR and CIR, and establishing their independent associations with blood pressure, BMI, waist circumference, HbA1c, LDL-C, HDL-C, total cholesterol, and triglycerides. Leveraging previously collected data, we will use a longitudinal model with random slopes to test whether exposure and access to the Interoceanic Highway modifies the relationship between western diet adoption and cardiovascular disease risk in adults.

Results: N/A (protocol).

Conclusions: We expect this work to substantially add to the limited bodies of evidence on nutritional epidemiologic biomarkers and direct and indirect health impacts of infrastructure development in remote LMIC regions. We expect this work to contribute to effective strategies to prevent cardiometabolic disease in at-risk populations across Amazonia and beyond.

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P22-017-23 Study Protocol: A Reverse Translational Approach to Understanding the Role of the Gut Microbiome in Blueberry Polyphenol Bioavailability

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Objectives: Mounting evidence indicates age-related vascular endothelial dysfunction (VED), characterized by impaired endothelium-dependent dilation, is central to cardiovascular disease pathogenesis. The gut microbiome is the collection of intestinal microorganisms and their genes and has been linked to the development of VED. Accumulating evidence suggests that polyphenols, present in blueberries, exert cardiovascular-protective effects. Polyphenols are secondary plant metabolites, many of which are catabolized by the gut microbiota to metabolites that are released into circulation, where they interact with tissues and organs to exert health effects. Our laboratory