



NUTRITION CONGRESS

7- 9 OCTOBER 2026

WANDERERS CLUB, JOHANNESBURG

QHAMUKA: A CALL TO SERVE, LEAD & INNOVATE IN NUTRITION

Abstract Book



2026 NUTRITION CONGRESS

30th Congress of the Nutrition Society of South Africa (NSSA)
18th Congress of the Association for Dietetics in South Africa (ADSA)



www.nutritioncongress.co.za

— ABSTRACT INFORMATION —

Listed Alphabetically by
PRESENTER LAST NAME

QUICK SEARCH

—Control (ctrl) – F then type author last name and ENTER—

—ORAL ABSTRACTS **SCIENTIFIC | RESEARCH**
PAGES **3 - 65**

—ORAL ABSTRACTS **INFORMATION EDUCATION**
PAGES **66 - 81**

—POSTER ABSTRACTS **SCIENTIFIC | RESEARCH**
PAGES **82 - 112**

—POSTER ABSTRACTS **INFORMATION | EDUCATION**
PAGES **113 - 123**

—**ABSTRACTS HAVE NOT BEEN EDITED**
PUBLISHED AS RECEIVED BY SUBMITTERS—

—The drivers and strategies of workforce upskilling in dietetics and nutrition sciences

Mrs Ronel Beukes¹, Dr Marianne Bester¹, Professor Evette van Niekerk¹

¹Stellenbosch University, Cape Town, South Africa

Background: Rapidly transforming health systems aimed at improving population health outcomes should be supported by a well-trained, adequately resourced workforce. Within this context, nutrition professionals should possess the competencies needed to navigate evolving healthcare demands, particularly in expanded clinical, public health, digital, and system-level roles. Understanding the drivers of workforce upskilling and the strategies used to address these demands is essential for informing continuing professional development, workforce development initiatives, and workforce planning.

Methods: A scoping review was conducted following the Arksey and O'Malley framework and JBI guidance, with a protocol registered on the Open Science Framework. A three-step search strategy (1994–2025) was applied across multiple electronic databases and grey literature sources. Two reviewers independently screened titles, abstracts, and full texts using PCC-aligned inclusion criteria. Data were extracted by the primary reviewer, with a 10% sample independently verified, and synthesised descriptively and thematically. Deviations from the protocol were documented and justified.

Results: Forty-eight publications were included, with output increasing over time from 2011 onwards and peaking between 2021 and 2025. Most studies originated from high-income countries, with limited representation from low- and middle-income settings. The evidence base was methodologically diverse, comprising qualitative, quantitative, and mixed methods designs, and primarily addressed non-nutrition health professional populations rather than dietetic and nutrition professionals alone. Key drivers for workforce upskilling included health system changes and evolving service delivery requirements and workforce retention, career progression and satisfaction. Identified strategies most frequently focused on formalised education and career pathways, work integrated learning and digital and flexible initiatives.

Conclusion: Workforce upskilling of dietetic and nutrition professionals is shaped predominantly by system- and organisation-level drivers, with strategies centred on structured education pathways within a flexible learning environment. Gaps in nutrition-specific evidence and limited inclusion of lower-income contexts highlight the need for more targeted, contextually responsive workforce development research.

—Gastrointestinal integrity is associated with systemic inflammation and gut symptoms in South African female university-level team-sport players

Mrs Marlize Botha¹, Prof Arista Nienaber¹, Dr Isabelle Herter-Aeberli², Prof Yolandi Willemse³, Ms Jana Storm³, Ms Zoleka Zuma¹, Prof Lize Havemann-Nel¹, Dr Mary Uyoga¹, Prof Linda Malan¹

¹Center of Excellence for Nutrition, North-west University, Potchefstroom, South Africa, ²Laboratory of Nutrition and Metabolic Epigenetics, ETH Zurich, Zurich, Switzerland, ³Centre of Health and Human Performance, North-West University, Potchefstroom, South Africa

Introduction: Female team-sport players frequently experience exercise-induced gastrointestinal (GI) syndrome- a multifaceted physiological response to exercise that disrupts GI integrity, manifesting as GI symptoms. However, research in a South African context is lacking.

Objectives: To explore markers of GI integrity and their association with systemic inflammation, GI symptoms, and maximum oxygen uptake (VO₂ max) in high-performance female university-level team-sport players.

Methods: This analytical cross-sectional study received ethical approval and included 69 female soccer (23%), netball (32%), and hockey (45%) players from a university in the North West Province. Resting GI integrity (intestinal fatty acid binding protein [I-FABP], soluble cluster of differentiation 14 [sCD14]) and systemic inflammatory markers (C-reactive protein [CRP], Alpha-1-acid glycoprotein [AGP]) at rest were analysed using Q-Plex Human Environmental Enteric Dysfunction (11-Plex) assay, and aerobic fitness was assessed through VO₂max estimation obtained from a three-minute indirect aerobic cycle-ergometer test. Seven-day retrospective GI symptoms were categorised using a five-point severity Likert scale. Data were analysed with partial Pearson correlations, Spearman rank tests and multivariable linear regression. Differences between groups were determined using independent t-tests and effect sizes with Cohen's d.

Results: Elevated resting plasma sCD14 was observed in 93% of players, while 78% had elevated AGP (>1g/L). Resting plasma sCD14 positively correlated with CRP (rP=0.252, p=0.045) and AGP (rP=0.411, p<0.001). Of the players, 48% reported at least one GI symptom; the most frequent were bloating (29%), abdominal noise (23%), and flatulence (15%). Resting plasma sCD14 levels were higher in players with heartburn (p=0.049) and positively correlated with heartburn severity (p=0.028). VO₂ max did not significantly correlate with GI integrity.

Conclusion: Female team-sport players exhibited elevated sCD14 levels at rest, indicating bacterial translocation. They presented with chronic low-grade systemic inflammation, and the majority struggled with GI symptoms. Lastly, resting sCD14 correlated with systemic inflammation and heartburn severity.

—Reliability and comparative validity of the IRONIC-FFQ adapted for the South African context among nutrition students

Ms Janetta Hermiena Botha¹, Prof Zelda White¹, Dr Claire Martin¹

¹University of Pretoria, Pretoria, South Africa

Introduction: Iron deficiency remains common in young adults, but the use of brief iron intake screening tools requires validation in local contexts. This study aimed to evaluate the test–retest reliability and comparative validity of the IRON Intake Calculation–Food Frequency Questionnaire (IRONIC-FFQ) adapted for the South African context among undergraduate nutrition students.

Methods: Nutrition students (mean age 20.6 ± 2.1 years) completed a 3-day weighed food record (WFR; reference method), followed by two administrations of an online version of the adapted IRONIC-FFQ (index test) two weeks apart. Reliability was evaluated using paired t-test, Pearson correlation and intraclass correlation coefficient (ICC). Comparative validity against WFR was assessed with Wilcoxon signed-rank testing, Spearman correlation, ICC and Bland–Altman analysis. Agreement in classifying intake adequacy was examined using Cohen’s Kappa.

Results: Test–retest reliability ($n=32$) was good, with no significant difference between test and retest (mean difference 0.20 mg, 95% CI -0.78 to 1.18 ; $p=0.676$), strong Pearson correlation ($r=0.73$, $p<0.001$), and good absolute reliability (ICC= 0.73 , 95% CI 0.51 – 0.86). Comparative validity ($n=54$) indicated poor agreement. Median iron intake was significantly higher for WFRs than for the screener (9.65 vs 5.71 mg/day; $Z=5.334$; $p<0.001$), with very weak Spearman correlation ($\rho=0.105$, $p=0.449$) and low agreement (ICC= 0.082 , 95% CI -0.189 to 0.340). Bland–Altman analysis showed a mean bias of 5.70 mg/day with wide limits of agreement (-6.33 to 17.73 mg/day). Agreement in classifying intake adequacy beyond chance was negligible (Kappa= 0.008 ; $p=0.462$).

Conclusion: The adapted IRONIC-FFQ demonstrated good short-term reliability but limited comparative validity against 3-day WFRs, indicating that further refinement is required before use for individual-level iron intake screening.

—Does diet quality drive metabolic response? Changes in Mediterranean diet adherence and metabolic syndrome severity during a lifestyle intervention

Ms Leonie Burgard^{1,2}, PD Dr. er. Nat. Walburga Dieterich^{1,2}, Prof. Dr. Phil Dr. Habil. Med Dejan Reljic^{1,2}, Dr. oec. troph. Hans Joachim Herrmann^{1,2}, Prof. Dr. med. Markus Friedrich Neurath^{2,3}, Prof Dr. med. Yurdagül Zopf^{1,2}

¹Hector-Center for Nutrition, Exercise and Sports, Department of Medicine 1, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany, ²Department of Medicine 1, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany, ³Deutsches Zentrum Immuntherapie (DZI), Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany

Introduction: Recent meta-analyses suggest that intermittent fasting may not provide additional benefits for weight loss or cardiometabolic risk reduction compared with other dietary strategies. Consistent with this, preliminary analyses from our randomized controlled lifestyle trial showed no significant differences in metabolic syndrome (MetS) severity between groups. We therefore investigated whether changes in Mediterranean diet adherence drive improvements in MetS severity.

Methods: This analysis included 130 participants with metabolic syndrome. Over a twelve-week period, all participants followed a Mediterranean diet and were randomized to additional interventions including alternate-day fasting (n = 32), time-restricted eating (n = 39), time-restricted eating combined with high-intensity interval training (n = 32), or Mediterranean diet alone (n = 29). MetS severity was assessed using the MetS z-score, and changes in Mediterranean diet adherence were quantified using the Medi-score (range 1–14). Associations between changes in diet adherence and post-intervention MetS severity were evaluated using multivariable linear regression adjusting for baseline MetS z-score, age, sex, and intervention group.

Results: Both MetS severity and Mediterranean diet adherence improved significantly during the intervention (mean Δ MetS z-score = -1.85 , $p < 0.001$; mean Δ Medi-score = 2.58 , $p < 0.001$), regardless of intervention group. However, changes in MetS z-score and Medi-score were not significantly correlated ($r = -0.10$; $p = 0.26$). In multivariable models, baseline MetS z-score was the strongest predictor of post-intervention MetS z-score ($p < 0.001$), whereas Medi-score change was not independently associated.

Conclusion: Multimodal lifestyle interventions may substantially improve metabolic syndrome severity. These improvements may reflect broader lifestyle adaptations beyond measurable adherence to a single intervention component.

—Impact of maturity and drying on total phenolic content and antioxidant capacity of ‘Keitt’ mango over two harvest seasons

Ms Taylor Carnie¹

¹Stellenbosch University, Stellenbosch, South Africa

Introduction: Mango (*Mangifera indica* L.) fruit is a rich source of dietary fibre, antioxidants, and phenolic compounds, which can exhibit antioxidant activity and have the potential to protect the body from degenerative diseases such as cancer and heart disease.

Objectives: To investigate the impact of maturity stage and hot air drying on antioxidant capacity and total phenolic content of ‘Keitt’ mango over two harvest seasons.

Methods: Mango fruits were processed at maturity stages 3 and 4. Sliced mangoes were oven dried at 60 °C. The total phenolic content (TPC) and antioxidant capacity for fresh and dried mango slices was determined using the Folin-Ciocalteu method and the ABTS (2,2'-azinobis (3-ethylbenzthiazoline-sulphonic-acid)) assay, respectively. Analysis of variance (ANOVA) and the correlation coefficients were used to test the data using XLSTAT software (2025.1).

Results: The post-hoc analysis indicated that hot air drying significantly influenced the TPC and antioxidant capacity ($p < 0.01$) over both harvest seasons. However, the maturity stage did not significantly affect the antioxidant capacity within the fresh or dried samples, but the maturity did significantly ($p < 0.05$) affect the TPC. The positive correlation between phenolic content and antioxidant capacity ($r^2=0.701$) confirmed that phenolic compounds are major contributors to the antioxidant capacity of mango. The TPC ranged from 74.1 g GAE/100g in the fresh samples to 958.11g GAE/100g in the dried samples, whereas the fresh to dried antioxidant capacity increased from 204.90-1745.26 mmol TE/100g.

Conclusions: Dried mango had elevated levels of phenolic compounds and antioxidant capacity suggesting that dried mango products may serve as a valuable dietary source of bioactive compounds. This presentation will highlight how maturity stage and hot air drying affect phenolic content and antioxidant capacity in mango, offering valuable insights to help researchers and industry professionals optimize processing methods and improve the nutritional quality of dried fruit products.

—Nutritional profile of patients with severe dysphagia with feeding tubes at a tertiary hospital in central South Africa

Mrs Carine Luwes¹, Prof Corinna Walsh¹, Miss Mariette Nel¹, Mrs Angelique Carson-Porter¹

¹University of the Free State, Bloemfontein, South Africa

Background: Dysphagia, a condition affecting millions globally, poses serious health risks if not managed correctly, yet remains under-researched in Africa.

Objective: To describe the nutritional profile of patients with dysphagia with gastrostomy or jejunostomy tubes at a tertiary hospital in central South Africa.

Design: A retrospective, cross-sectional design was applied at Pelonomi Tertiary Hospital, Bloemfontein. A total of 77 patient records from 2018 to 2022 were available and included, all of whom were referred to the dietitian and admitted to the surgical ward. Anthropometry, biochemistry, and clinical parameters were recorded in a Research Electronic Data Capture (REDCap) questionnaire. Associations between cancer and all parameters, including body mass index (BMI), were assessed. Severe malnutrition was determined according to the Global Leadership Initiative on Malnutrition (GLIM) criteria. Biochemistry results were compared between males and females.

Results: Cancer was diagnosed in 92.2% (n=71) of the study population, with oesophageal cancer as the most prevalent cancer (n=65, 84.4%). Squamous cell carcinoma was the most prevalent histological marker (n=52, 86.7%), followed by Adenocarcinoma (n=4, 6.7%). The median BMI of participants was 14.8 kg/m² (n=74); this was classified as underweight, with 77.0% of participants having severe malnutrition according to the GLIM criteria (n=57). Statistically significant associations were found between HIV+ and low BMI (P = 0.042), between cancer-positive histology and lower BMI (P = 0.0004), and between histology type and BMI (P = 0.01). The BMI group distribution differed significantly between males and females (P = 0.003). Most participants had low albumin (n=70, 84.3%) and low mean corpuscular haemoglobin concentration (MCHC) (n=74, 86.5%) levels. Over half of the population had a low haemoglobin (n=74, 60.8%).

Conclusion: Participants with severe dysphagia were nutritionally at risk, with the majority presenting with severe malnutrition. Prompt referral to dietitians should be a priority to ensure timely nutritional support.

—mHealth for community-based growth monitoring and promotion: Three case studies from South African settings

Ms Anna-Marie Müller³, **Mrs Helen Donkin**^{1,2}, Ms Emma Chademana⁴, Ms Phiwe Dauwa⁴

¹Independent, Pietermaritzburg, South Africa, ²Zero2Five Trust, Durban, South Africa, ³Grow Great Campaign, DG Murray Trust, Johannesburg, South Africa, ⁴One to One Children's Fund, Cape Town, South Africa

Introduction: Optimal nutrition and growth of vulnerable children under five years require appropriate growth monitoring and promotion (GMP) through regular measurement and follow up, to detect nutritional problems early and prevent malnutrition. Routine surveillance of children's growth, especially height, is not currently taking place reliably in primary healthcare (PHC) facilities. Community-based GMP responds to this gap, which could benefit from integration with mHealth tools. This case study aims to illustrate the application of mHealth for community-based GMP and to derive recommendations for its use in similar settings.

Methods: A multiple-case study approach was used. Cases were selected on collective emphasis on reducing child malnutrition and willingness to contributing to research. A consistent case description structure controlled for author bias. Case studies were developed independently, after which similarities and contrasts were identified. Thematic analysis created key insights, enabling cross-case synthesis and recommendations for mHealth in GMP.

Results: Three South African non-profit organisations - Zero2Five Trust, Grow Great Campaign, and One-to-One Africa - using mHealth for community-based GMP are compared. Two organisations customised existing no-code applications, while one developed its own. All implemented mHealth in rural, remote communities. mHealth improved growth data accuracy and interpretation, enabling referrals by non-specialist fieldworkers. Integration into existing systems and offline functionality were critical due to poor connectivity and high data costs; device costs were also a factor. Three main recommendations include: adequate capacitation of users to conduct anthropometric measurements; offline functionality to address limited connectivity and mobile data access; and lastly, long-term sustainability through integration into existing systems.

Conclusion: GMP mHealth improves data completeness, enables real-time growth measurement interpretation, and thus timely referral, contributing to earlier detection of under-five malnutrition. mHealth holds significant potential to strengthen community-based growth monitoring. Success, however, depends on aligning mHealth with existing systems, sustained investment, and equitable access to digital infrastructure.

—Ultra-processed research: Mapping the corporate political activity strategies of the food industry in South Africa

Dr Tamryn Frank¹, Dr Sicelosethu Siro¹, Mrs Tauhira Behardien¹, Mr Gareth Coetzee¹, Dr Safura Abdool Karim²

¹School of Public Health, University Of The Western Cape, Cape Town, South Africa, ²Law, Policy and Ethics Research Programme, CAPRISA, Durban, South Africa

Introduction: Corporate political activity (CPA) strategies are purposefully employed by corporations to influence public policies and secure preferential treatment to further their corporate interests. An extensive investigation into CPA in SA using internal industry documents has not been undertaken. This study aimed to explore the range of CPA activities employed by the food industry in SA.

Methods: The publicly available UCSF Food Industry Documents Archives obtained through court cases and other public disclosure measures were searched for documents (internal emails, reports etc.) containing the term “South Africa”. Of 3034 screened documents, 2851 were excluded and 183 included. Data were extracted using a standardized data extraction template, and thematic analysis undertaken to investigate instrumental and discursive CPA strategies using the policy dystopia taxonomy adapted to the food industry. Corporate case studies of CPA strategies employed by corporations were built using the findings.

Results: Preliminary results show that instrumental strategies (n = 208) were commonly identified CPA strategies employed by the food industry in SA. This included information management (n = 167), such as production and amplification, and coalition management (n = 37), amongst others. Discursive strategies were less common, with only 6 instances identified. A case study of instrumental strategies found one multi-national food corporation using coalition management strategies to foster political connections, insert itself in food regulation discussions, and partner with government. This company also participated in information management, funding the production of nutrition research in SA, and facilitating amplification of carefully tailored research findings through conference and media engagements.

Conclusion: The food industry participates in various CPA in SA. This undermines the adoption and implementation of protective public policy. Clear guidelines should inform ethical food industry engagements into research- and regulatory development processes.

—The unbroken chain: Nutritional adequacy, cumulative micronutrient deficits, and foodservice governance in Eastern Cape psychiatric hospitals, South Africa

Mrs Asanda Getyeza-Ntswam¹

¹University of the Western Cape, School of Public Health, Cape Town, South Africa, ²Department of Dietetics and Nutrition, DSTI/NRF CoE in Food Security, University of the Western Cape, Cape Town, South Africa

Introduction: Globally, people with severe mental illness face a disproportionate nutritional burden: up to one-third of psychiatric inpatients are at risk of malnutrition, compounded by antipsychotic-induced metabolic dysregulation, appetite disruption, and prolonged hospitalisation (Risch et al., 2022). Despite this, institutional nutrition in psychiatric care remains critically underexplored in policy and research.

Objective: To assess energy and micronutrient adequacy of meals at four Eastern Cape public psychiatric hospitals against Dietary Reference Intakes (DRIs); quantify and characterise plate waste; and identify structural governance factors constraining nutritionally adequate, culturally appropriate care.

Methods: A convergent mixed-methods cross-sectional study at four public psychiatric hospitals (1,294 beds; 92.7% Xhosa-speaking). Intake was assessed via plate-waste audits (three days/hospital) and profiled against DRIs using FoodFinder® 3 (SAMRC, 2019). Governance drivers were assessed through key informant interviews (n = 16), structured questionnaires (n = 78), and document review; qualitative data were analysed in NVivo 12.

Results: Three hospitals met energy and macronutrient requirements; Hospital A was deficient across all sex categories. Micronutrient deficits were universal: calcium 210.6-454.7 mg/day (21-45% RDA); vitamin C 38-54 mg/day, mirroring conditions that caused scurvy at Fort Beaufort; folate 121 µg/day (30% RDA), with neuropsychiatric implications; fiber 10.3-21.5 g/day; and vitamins A, B₁, B₂, and B₉ below DRI thresholds. Modelled 90-day deficits: calcium 60,435 mg, folate 26,973 µg, vitamin C 3,060 mg - linked to immune compromise and treatment failure. Plate waste in female wards (21.3-27.9%), overproduction, and temperature non-compliance (35-43°C vs. a minimum of 60°C). Governance gaps: absence of dietitian oversight; recipe- and ration-scale non-compliance; menu non-adherence; exclusion of culturally significant foods.

Conclusion: Eastern Cape psychiatric foodservice perpetuates malnutrition, undermining treatment efficacy and patients' right to adequate nutrition. Immediate priorities: mandatory dietitian appointment, culturally responsive menu reform incorporating culturally acceptable foods, and ration-scale compliance. Nutrition is treatment, not a budget line.

—A youth-led participatory action research approach to generate policy ideas for obesity prevention

Prof Janetta Harbron¹, Ms Debby Gates¹, Ms Hanli Etsebeth¹

¹University of Cape Town, Cape Town, South Africa

Adolescent obesity is a growing global health challenge. The CO-CREATE project sought to shift the focus from individual lifestyle choices in obesity to a systems approach and involving youth in policy development. The aim was to investigate the influence of exogenous and endogenous processes on youth involvement in policy development for obesity prevention, and to identify the policy ideas generated.

This qualitative study utilized Youth-led Participatory Action Research (YPAR) to engage adolescents (n=45) aged 16–18 from three Western Cape communities: Khayelitsha, Nyanga, and Hout Bay. Recruitment was done with a purposeful sampling technique after ethics approval. The youth participated in six alliance meetings (1-2 hours each) over 3-months with trained facilitators and co-facilitators covering activities such as group building, system mapping, conversational interviewing and photovoice training, completing policy design forms, reflection, and testing ideas. Data were collected via 18 facilitator feedback forms, 18 co-facilitator notes, 53 SHOWeD forms, and 10 policy forms, which were then analysed using NVivo.

Core themes on processes in youth involvement included: engagement, group dynamics, health knowledge, responsibility and the impact of socio-economic status. Despite challenges such as language barriers and time constraints, participants demonstrated high engagement and trust during the process. The youth possess high health literacy regarding systemic obesity drivers, prioritising environmental barriers—such as high food costs and lack of infrastructure—over individual responsibility. The 31 policy ideas generated were classified under policies for an environment supporting physical activity, healthy food, knowledge of health, agriculture and cultivation of food gardens to be self-sustaining and an environment reducing societal pressure and stress and improving mental health and social media use.

The study demonstrates that youth engagement in research is a viable method for generating context-specific health policies. By leveraging the lived experiences of adolescents, the YPAR approach provides unique insights into addressing the obesogenic system.

—Advancing South Africa's nutritional data infrastructure: Development and validation of the first South African dietary polyphenol reference database

Dr Malory Rowena Jumat^{1,2}, Prof Kwaku Duodu², Dr Averalda van Graan^{1,3}

¹Biostatistics Research Unit – South African Food Data System (SAFOODS) division, South African Medical Research Council, Cape Town, South Africa, ²Department of Food and Consumer Science, University of Pretoria, Pretoria, South Africa, ³Department of Global Health, Division of Human Nutrition; Faculty of Medicine and Health Sciences; Stellenbosch University, Cape Town, South Africa

Introduction: Diet-related non-communicable diseases (NCDs) remain major causes of global morbidity and mortality, particularly in developing countries. Polyphenols are bioactive plant metabolites with antioxidant and anti-inflammatory properties and are increasingly recognised for their potential role in NCD prevention. However, the absence of a comprehensive, standardised South African polyphenol composition database has limited accurate assessment of dietary polyphenol intake. This study aimed to develop and validate the first South African Dietary Polyphenol Reference Database (SADPRD).

Methods: A four-stage approach was followed. First, a systematic review of South African literature was conducted, which identified polyphenol composition data. It involved screening 4 944 literature sources, of which 384 met inclusion criteria. Second, the South African Dietary Polyphenol Data Quality Assessment Tool (SADPDQAT) was developed, validated, and applied to assess data quality. High-quality sources (quality index $\geq 80\%$) were compiled using internationally standardised methods. Finally, selected foods underwent analytical validation, including sampling, phenolic extraction, spectrophotometric and chromatographic quantification, and statistical comparison with database values.

Results: The SADPRD contained polyphenol concentration data for 237 South African foods, comprising 1002 entries across eight polyphenol classes generated using eight analytical methods. Herbal teas and wines were well represented. The SADPDQAT demonstrated good internal consistency ($\alpha = 0.616$) and high inter-rater agreement. Analytical validation of 26 polyphenols across 71 foods showed strong agreement with SADPRD values, with statistically significant differences in $< 10\%$ of comparisons. Variability between literature-derived and analytical values fell within expected biological ranges.

Conclusion: This study developed the first validated polyphenol composition database for South Africa and the African continent, addressing a critical data gap and enabling population-specific dietary polyphenol assessment. The SADPRD strengthens research on dietary polyphenol composition and supports applications in nutrition research, food policy, and the food industry, while enhancing South Africa's nutritional data infrastructure and evidence base for research and innovation.

—South African adolescents' perceptions of healthy and unhealthy foods and determinants of their food choices within the school food environment

Ms Alice Khan¹, Prof Francesca Dillman Carpentier², Prof Elizabeth Catherina Swart¹

¹University of the Western Cape, Belville, Cape Town, South Africa, ²University of North Carolina, Chapel Hill, USA

Introduction: One in five children aged between 5- 19 years are overweight or obese in South Africa (SA) and this statistic is increasing. Children spend a substantial amount of time in their school food environment (SFE), which plays a role in shaping their food choices, presenting a pivotal setting to improve diets.

Objective: To investigate South African adolescent school-going learners' knowledge and understanding of healthy and unhealthy foods and the drivers of their food choices in their SFE.

Methods: Qualitative participatory research methods including workshops, photovoice and focus group discussions were conducted, among 42 adolescents aged 14-18 years, in two urban public high schools: one in a non-metropolitan area in the Eastern Cape Province and the other in a metropolitan area in the Gauteng province.

Results: Unhealthy ultra-processed foods (UPFs) were found to be pervasive in the SFE, while healthier options were limited, thereby constraining learners' choices. Taste preference was a major driver of adolescent food choices as were satiety, value for money, affordability, convenience, visual appeal and seeming "cool or "rich" by purchasing branded franchise fast foods. Although learners possessed a basic understanding of nutrition, this knowledge often did not result in healthy food choices. Banning unhealthy foods in the SFE and providing affordable and satiating healthy foods were proposed as solutions.

Conclusion: Interventions to change the SFE are necessary to foster healthier dietary options and eventually adolescent food choices. Government regulation to prohibit the sale of unhealthy food and beverages in the SFE is imperative, alongside subsidisation of nutritious, satiating foods to promote healthier dietary behaviour.

—The effects of immune-modulatory nutrients in pulmonary tuberculosis patients: a systematic review and meta-analysis

Dr Simoné King¹, Prof Linda Malan¹, Prof Jaco Visagie³, Dr Frank Hayford^{1,2}, Prof Lizelle Zandberg¹, Prof Robin Dolman-Macleod¹, Prof Arista Nienaber¹

¹Centre of Excellence for Nutrition (CEN), North-West University (NWU), Potchefstroom, South Africa, ²Department of Dietetics, School of Biomedical and Allied Health Sciences, College of Health Sciences, University of Ghana, Legon, Ghana, ³Pure and Applied Analytics, North-West University (NWU), Potchefstroom, South Africa

Introduction: Tuberculosis (TB) remains the leading cause of death from a single infectious agent worldwide. Despite improvements in diagnostics and pharmacotherapy, treatment outcomes remain suboptimal. Immune-modulatory nutrients have been proposed as host-directed therapy (HDT) to support immune function and modulate inflammation. This study evaluated the effects of immunonutrients as adjunct treatment in adults with pulmonary, drug-sensitive TB.

Methods: A systematic review and meta-analysis were conducted using Scopus, Web of Science, Cochrane Library, and PubMed. Eligible studies included randomised controlled trials (RCTs) that investigated omega-3 long-chain polyunsaturated fatty acids (n-3 LCPUFA), vitamins A, C, D and E, selenium, zinc, arginine, glutamine, iron and nucleotides as adjunct TB treatment in adult pulmonary TB (PTB) patients compared to standard TB treatment alone or with a placebo. Outcomes included sputum smear or culture conversion, culture time to conversion, inflammation markers, all-cause mortality, and TB score. Multimicronutrient formulations were excluded. The risk of bias for each included study was evaluated, and the quality of evidence was assessed using the GRADE method.

Results: Forty-four studies met the inclusion criteria, comprising 43 RCTs and one quasi-experimental trial. Adjunct arginine supplementation improved sputum smear conversion at eight weeks and reduced CRP levels compared with placebo. Adjunct vitamin C improved sputum smear conversion. Vitamin D reduced TB score, CRP, and increased IFN- γ . Vitamin A, zinc and their combination showed no significant effects on outcomes investigated. No eligible trials were identified for vitamin E, selenium, n-3 LCPUFA, nucleotides, iron or glutamine. Overall certainty of evidence was low to very low.

Conclusion: Arginine, vitamin C, and vitamin D may improve selected clinical outcomes in PTB, including smear conversion, TB score and inflammatory markers. However, effects were modest and inconsistent. While evidence remains limited, current findings support a potential role for immune-modulating nutrients as adjunct HDT in TB.

—Online grocery shopping and nutrition labelling in South Africa: An analysis of digital platforms

Mrs Nicole Van Tonder¹, **Dr Nelene Koen**¹

¹Division of Human Nutrition, Department of Global Health, Stellenbosch University, Cape Town, South Africa

Introduction: The growing prevalence of online grocery shopping has given rise to increased food and beverage options on digital platforms, raising concerns about accessible nutrition information. This study aimed to determine the availability and accessibility of nutrition-related information on food and non-alcoholic beverage products listed on websites and applications (apps) of online food retailers in South Africa.

Methods: A cross-sectional descriptive study with an analytic component examined 21 South African online grocery stores (websites and apps). Food items across eight categories were screened for the availability and accessibility of nutrition information using a validated checklist. In total, 3 022 items on websites (n=20) and 2 102 on apps (n=11) were reviewed.

Results: Nutrition information on food items was displayed either via images (n = 2; 9.5%) or text and images (n = 19; 90.5%). Fewer than 40% (range: 18.8–35.7%) of food items on websites displayed a nutrition information table (NIT), compared to less than 30% (range: 16.4–25.9%) for apps. Websites displayed ingredient lists for 34.4% (n = 1 040) of food items, compared to 27.4% (n = 576) for apps. Websites performed better in displaying information on serving sizes (20.4%, n = 616) compared to apps (14.1%, n = 296). Apps required fewer clicks (mean: 1.4; range: 1.3–1.6) to access nutrition information compared to websites (mean: 1.6; range: 1.5–1.6) ($p < 0.0001$). Websites provided more nutrition-related information than apps, including the list of ingredients ($p < 0.00001$), serving size ($p < 0.00001$), allergens ($p < 0.00001$), and instructions for use ($p = 0.4626$), nutrient content claims ($p = 0.0031$), and NIT ($p = 0.0031$).

Conclusions: Inconsistencies in the availability and accessibility of nutrition information across South African online grocery stores highlight the need for standardised labelling to support informed consumer choices and promote public health.

—Scenario-based costing analysis of exclusive breastfeeding for South African mothers: A protocol

Mrs Leonore Kotze¹, Professor Christine Taljaard-Krugell¹, Professor Carike Claassen², Professor Catherine Pereira-Kotze³

¹Northwest University, Potchefstroom, South Africa, ²University of Johannesburg, Johannesburg, South Africa, ³South African Medical Research Council, Cape Town, South Africa

Introduction: South Africa (SA) struggles with persistently low exclusive breastfeeding rates. A contributing factor is that breastfeeding, as a form of unpaid care work, remains insufficiently recognised and supported within economic policy frameworks. In low-income contexts, where structural constraints persist, a limited understanding of the personal maternal costs - including time and income related opportunity costs - required to maintain exclusive breastfeeding can hinder progress toward higher EBF rates. This protocol therefore proposes a scenario-based calculation of these personal costs for SA mothers.

Methods: This protocol consists of three objectives. First, creating three evidence-informed persona's representing SA mothers from income quartiles 1 and 2. Second, to estimate and analyse minimum personal costs associated with maintaining exclusive breastfeeding for each developed persona (Objective 1). Third, to evaluate current SA maternal support and protection legislation relating to findings of Objective 2 and provide recommendations.

Outputs from Objective 1 will be presented. Key steps in developing the personas include clarifying the guiding assumptions and decision rules for their construction. Socio-economic characteristics are used to identify constraints to EBF. The most feasible breastfeeding method and minimum bundle of resources required to maintain exclusivity are identified and costed. Both direct and opportunity costs are incorporated to estimate the total personal cost for each persona.

Results: The first persona represents a 16-year-old schoolgirl with 3-month-old baby. To achieve exclusive breastfeeding upon returning to school, she faces direct costs such as feeding devices, storage facilities and transport. Reduced academic productivity due to increased time spent on caring activities (estimated 3-4 hours per day) are an opportunity cost faced. The total personal cost of this persona will be presented in full.

Conclusion: By determining the cost associated with EBF across various personas, this protocol aims to generate evidence that can strengthen SA economic and health policy.

—Omega-3 long-chain polyunsaturated fatty acid supplementation increase pro-resolving plasma lipid mediators in South African women living with overweight or obesity

Ms Chere Le Hanie¹, Dr Jeannine Baumgartner², Dr Mary Uyoga¹, Prof Lizelle Zandberg¹, Ms Cecile Cooke¹, Dr Isabelle Herter-Aeberli³, Prof Cornelius M Smuts¹, Prof Linda Malan¹

¹Centre of Excellence for Nutrition, North-West University, Potchefstroom, South Africa, Potchefstroom, South Africa,

²Department of Nutritional Sciences, Faculty of Life Sciences & Medicine, King's College London, London, United Kingdom, London, United Kingdom, ³Laboratory of Nutrition and Metabolic Epigenetics, ETH Zurich, Zurich, Switzerland, Zurich, Switzerland

Introduction: Obesity-associated chronic low-grade inflammation impairs iron absorption and reduces iron status in women of reproductive age (WRA). Twelve week 2.1 g/day omega-3 long-chain polyunsaturated fatty acid (n-3 LCPUFA) supplementation did not reduce inflammation or improve iron absorption. This secondary study aimed to determine how n-3 LCPUFA altered plasma lipid mediator concentrations.

Methods: Thirty South African WRA (18–35 years) living with OW/OB and low n-3 LCPUFA status consumed 2.1 g/day n-3 LCPUFA for 12(+2) weeks. Fasting blood samples at baseline and endpoint were analysed for plasma lipid mediators, inflammatory markers, ferritin, sTfR, Hb, and RBC fatty acids. Fractional iron absorption (FIA) with and without ascorbic acid (+/- AA) was assessed using ⁵⁷Fe and ⁵⁸Fe stable isotopes at baseline and after 14 weeks.

Results: After supplementation 17-hydroxydocosahexaenoic acid (HDHA) increased by 100% (p < 0.001), eicosapentaenoic acid (EPA)-derived lipid mediators, 18-hydroxyeicosapentaenoic acid (HEPE) by 325% and RvE1 by 40% (both p < 0.001). Other HEPEs increased between 183 and 400% (all p ≤ 0.002). Before and after supplementation FIA correlated positively with n-3 index (r = 0.413, p = 0.032 and r = 0.416, p = 0.031, respectively) and with DHA (r = 0.418, p = 0.030 and r = 0.393, p = 0.042, respectively).

Conclusion: A higher n-3 LCPUFA status indicating a more anti-inflammatory status associates positively with iron absorption. While 2.1 g daily n-3 LCPUFA supplementation for 12 weeks increased pro-resolving lipid mediators, it did not reduce arachidonic acid-derived pro-inflammatory mediators. Higher doses of n-3 LCPUFA or targeted weight loss interventions may be required to reduce inflammation and subsequently improve iron absorption and metabolism. Conflict of interest: None. Key words: Iron absorption, iron status, lipid mediators, obesity, omega-3 fatty acids, young women.

—Adherence to the South African Food-Based Dietary Guidelines among young adults aged 20-30 years: The African-PREDICT study

Ms Zeldah Luvha¹, Prof Tertia van Zyl^{1,3}, Prof Christine Taljaard-Krugell¹, Dr Inarie Jacobs²

¹Centre of Excellence for Nutrition, North-West University, Potchefstroom, South Africa, ²Nutrition and Metabolism Branch, International Agency for Research on Cancer / World Health Organization, Lyon, France, ³SAMRC Extramural Unit for Hypertension and Cardiovascular Disease, Faculty of Health Sciences, North-West University, Potchefstroom, South Africa

Introduction: Evidence on adherence to the South African Food-Based Dietary Guidelines (SAFBDGs) among young adults in South Africa is lacking, hindering the development of effective public health interventions. This study aimed to assess adherence to each SAFBDG and an overall SAFBDG score among young adults aged 20–30 years.

Methods: This cross-sectional study included 1,153 healthy men and women aged 20–30 years from Potchefstroom and surrounding areas, North-West Province. Data were collected at the Hypertension Research and Training Clinic, North-West University. Dietary intake was assessed using three non-consecutive 24-hour dietary recalls. Adherence to SAFBDGs was scored based on recommended portion sizes or percentages of total energy intake, as outlined in the SAFBDG technical support papers (1 point=adherence, 0 points=non-adherence). Scores for the eleven guidelines were summed to calculate an overall adherence score. Data were summarised using medians and frequencies, and overall adherence scores were categorised into tertiles. Ethical approval was obtained from the Health Research Ethics Committee of North-West University (NWU-00185-25-A1).

Results: Low overall adherence was observed, with only 2.3% of participants adhering to at least half of the guidelines. Low adherence was observed for several SAFBDG recommendations, including “Be active” (1.9%), “Eat dry beans, split peas, lentils and soya regularly” (4.2%), “Have milk, maas or yoghurt every day” (5.0%), “Eat plenty of vegetables and fruit every day” (11.8%), “Fish, chicken, lean meat (23.7%) or eggs (25.7%) can be eaten daily, and “Drink lots of clean, safe water” (13.3%). Moderate adherence was observed for “Enjoy a variety of foods” (57.4%) and “Use sugar and foods and drinks high in sugar sparingly” (51.7%). Overall, 26.8% of participants were in the highest tertile (overall adherence score ≥ 2.5).

Conclusion: Low adherence to SAFBDGs among young adults in North-West Province highlights the need for targeted public health interventions to improve dietary behaviours and health outcomes.

—Accuracy estimation of digital photographs for length measurements in infants and young children

Mrs Barbara Luyt², Prof Lisanne Du Plessis, Prof Evette Van Niekerk, Prof Kristiaan Schreve

¹Vanessa McEwan Dietitian Inc, Durbanville, South Africa, ²Stellenbosch University, Durbanville, South Africa

Introduction: Accurate length measurement is essential for identifying growth faltering and monitoring nutritional status in infants and young children. However, length measurement is frequently omitted or performed inaccurately in primary healthcare settings due to practical challenges, equipment limitations, and the difficulty of positioning infants correctly. Innovative measurement approaches may improve anthropometric assessment and strengthen growth monitoring practices. This study aimed to determine the accuracy and feasibility of using digital photographs to measure the length of infants and young children compared with standard manual length board measurements in a primary healthcare setting in Cape Town, South Africa.

Methods: An analytical cross-sectional study was conducted in a primary healthcare clinic in the Western Cape, South Africa. Infants and young children aged 0–24 months attending routine clinic visits were recruited (n = 40). Length measurements obtained using digital photography were compared with standard manual length board measurements. Three repeated measurements were obtained using each method. Digital photographs were processed using OpenCV software to extract the infant or young child's silhouette and calculate length. Agreement between measurement methods was assessed using paired t-tests, and measurement time was recorded.

Results: The mean difference between digital photographic measurements and standard manual length board measurements was -0.67 mm (SD 3.47 mm). There was no statistically significant difference between methods (p = 0.22), demonstrating comparable accuracy. Measurement time was also similar, with an average difference of 1.41 seconds (SD 8.74 seconds) and no statistically significant difference (p = 0.31).

Conclusion: Digital photography demonstrated comparable accuracy to standard manual length board measurements for determining the length of infants and young children. Although no significant time advantage was observed, digital imaging shows promise as an alternative anthropometric tool. With further development, digital measurement systems may improve the accuracy of growth monitoring and strengthen nutrition surveillance in primary healthcare settings.

—Trends in migration patterns of South African dietetics and human nutrition graduates: A retrospective study (2001–2024)

Dr Prudence Bongekile Mabaso¹, Mr Siyabonga Zikhali¹, Ms Hlobisile Mpotshana¹, Mr Sphelele Shange¹, Ms Tinstwalo Mthombeni¹, Ms Bongukuphila Ntshangase¹

¹University of KwaZulu-Natal, Scottsville, Pietermaritzburg, South Africa

Introduction: South Africa faces a well-documented brain drain of healthcare professionals, yet migration patterns among dietitians and nutritionists remain virtually unstudied despite their critical role in addressing the country's quadruple burden of disease. This retrospective study provides the first quantitative profile of migration trends among South African dietetics and human nutrition graduates over a 23-year period.

Methods: A retrospective review of the UKZN Department of Dietetics and Human Nutrition database identified all graduates who applied for foreign registration between 2001 and 2024 (n=162). Variables analysed included gender, race, age at degree completion, age at migration, qualification type, years between graduation and migration, and destination country. Data were analysed using SPSS (v22), employing descriptive statistics, cross-tabulations, and Pearson correlation coefficients.

Results: Of 162 migrating graduates, 95.1% were female and 77.2% were White, with African graduates comprising only 7.4% — though their representation increased notably in the most recent decade (2020–2024). Migration peaked in the first decade (2000–2009; 51.2%), declining to 32.7% (2010–2019) and 16.0% (2020–2024). The United Kingdom was the dominant destination (53.1%), followed by Australia (8.0%) and New Zealand (6.2%), with Ireland emerging as a growing destination in the most recent period. Most graduates migrated within one to two years post-graduation, with migration age concentrated in the 26–35-year range. A strong positive correlation was found between years post-graduation and age at migration ($R=0.715$, $p<0.001$), while more recent graduates tended to migrate at younger ages ($R=-0.366$, $p<0.001$).

Conclusion: While overall migration rates are declining, this study reveals persistent and racially skewed patterns that reflect South Africa's historical inequities and ongoing push factors. The concentration of migration among young, early-career graduates signals a critical window for targeted retention interventions. These findings provide an essential baseline for national workforce planning and underscore the urgency of addressing professional conditions that drive dietitians abroad.

—Bridging the language gap in nutrition care: Development of bilingual isiZulu–English resources for dietetics and human nutrition education

Dr Prudence Bongekile Mabaso¹, Ms Hannah Sheik¹, Ms Ziyanda Ngobese¹, Ms Lungile Nkosi¹, Mr Mbuso Mthembu¹

¹University of KwaZulu-Natal, Scottsville, Pietermaritzburg, South Africa

Introduction: Language barriers between nutrition professionals and isiZulu-speaking patients represent a structural threat to equitable healthcare in KwaZulu-Natal, compromising comprehension, adherence, and outcomes across prevalent nutrition-related conditions. Despite isiZulu being South Africa's most widely spoken indigenous language, no discipline-specific bilingual resources existed for dietetics and human nutrition. This study presents the first known isiZulu–English glossary and bilingual case histories developed specifically for the dietetics and human nutrition discipline.

Methods: Following an Educational Design Research framework, four fourth-year dietetics students conducted systematic document analysis of third- and fourth-year module materials spanning clinical nutrition, community nutrition, and food service management at UKZN. An initial pool of 800 discipline-specific terms underwent iterative verification and a two-phase translation process, combining technological tools with critical review by two isiZulu home-language researchers to ensure linguistic accuracy, cultural appropriateness, and clinical fidelity.

Results: Six hundred finalised terms were organised across three themes and 21 sub-themes mirroring core disciplinary competency areas. Of these, 510 terms were fully translated; 90 scientifically untranslatable terms were adapted using isiZulu linguistic conventions to preserve clinical meaning. Eight bilingual case histories were developed covering diabetes mellitus, severe acute malnutrition, hypertension, breastfeeding counselling, oral rehydration solution preparation, and formula feeding. The translation process exposed critical limitations of automated tools — including loss of clinical meaning, derogatory connotations, and failure to capture dialectal nuance — demonstrating that equitable nutrition communication requires human linguistic expertise, not technological shortcuts.

Conclusion: South Africa cannot achieve equitable nutrition care while professionals lack tools to communicate in the languages of communities they serve. This study demonstrates that student-led, curriculum-embedded language development is a feasible, scalable, and replicable model — one that advances decolonisation of nutrition education while strengthening care delivered to isiZulu-speaking patients. These resources are immediately available for integration into dietetics training programmes nationally.

—Comparison between two pregnancy-related dietary scores among pregnant women attending Antenatal Care in Atteridgeville, Tshwane

Ms Rodrey Mafodi^{1,2}, Dr Marinel Hoffman^{1,2}, Dr Sanja Nel^{2,3}, Dr Helen Mulol^{2,3}, Prof Ute Feucht^{2,4,5}

¹Department of Consumer and Food Sciences Faculty of Natural and Agricultural Sciences University of Pretoria, Pretoria, South Africa, ²Research Centre for Maternal Fetal Newborn and Child Health Care Strategies University of Pretoria, Pretoria, South Africa, ³Department of Human Nutrition Faculty of Health Sciences University of Pretoria, Pretoria, South Africa, ⁴Department of Paediatrics Faculty of Health Sciences University of Pretoria,, Pretoria, South Africa, ⁵Tshwane District Clinical Specialist Team Gauteng Department of Health, Pretoria, South Africa

Background: Maternal nutrition during pregnancy affects foetal growth, birth outcomes, and long-term infant health. This study investigated diet patterns of pregnant women in Tshwane District using two different diet scores.

Methods: We recruited 110 pregnant women (28-34 weeks' gestation) at two clinics and one hospital in Atteridgeville, Tshwane. Dietary intake was assessed using a single non-quantified 24-hour recall (24HR) and a 25-food-group non-quantified food frequency questionnaire (FFQ). The Women's Dietary Diversity Score (WDDS) (score 0-9, <5=inadequate) and the International Federation of Gynaecology and Obstetrics (FIGO) diet quality score (score 0-6, higher score desirable) were computed and compared using linear correlation and logistic regression.

Results: The median (IQR) WDDS was 5 (3–5), indicating borderline dietary diversity. The proportion of women consuming nutrient-rich food groups four or more times per week was 48 (44.03%) for legumes, nuts, and seeds, 48 (44.04%) for organ meats, 65 (59.73%) for eggs, 75 (68.07%) for vitamin A-rich fruits and vegetables, and 83 (76.14%) for dark green leafy vegetables. The median FIGO diet score was 2 (1–4). Most participants did not consume fish weekly, 66 (61.1%), while 69 (64.9%) consumed whole grains less than once daily. The FIGO score and WDDS were weakly correlated ($r = 0.09$). Logistic regression showed no significant association (OR = 1.20; 95% CI: 0.63–2.18).

Conclusion: Pregnant women attending antenatal care in Atteridgeville showed low dietary diversity and limited intake of nutrient-dense foods. The WDDS and FIGO dietary scores were poorly correlated, suggesting that the two tools are not interchangeable and may be appropriate for different contexts.

—Early infant feeding practices, intestinal permeability and risk of stunting at two years in a South African birth cohort

Dr Tjale Cloupas Mahopo^{1,2}, Dr Tirhani Masia^{1,2}, Prof Cebisa Nesamvuni^{1,2}, Prof Pascal Bessong²

¹University of Venda, Faculty of Health Sciences, Department of Nutrition, Thohoyandou, South Africa, ²University of Venda, Institute for Pathogen and Global Health, Thohoyandou, South Africa

Background: Suboptimal infant feeding practices and early introduction of complementary foods may compromise intestinal barrier function and contribute to growth faltering during early childhood.

Objective: To examine the relationship between infant feeding practices, timing of complementary food introduction, intestinal permeability, and stunting at 24 months of age.

Methods: A prospective birth cohort study was conducted in rural South Africa. Infant feeding information, including duration of exclusive breastfeeding and timing of complementary food introduction, was collected monthly. Intestinal permeability was assessed using the lactulose–mannitol (L:M) test at 3, 6, 9, and 15 months. Child anthropometric measurements were obtained monthly to determine stunting at 24 months based on the WHO growth standards. Logistic regression models examined associations among feeding practices, intestinal permeability, and stunting, adjusting for child sex and maternal socio-demographic factors.

Results: Approximately 300 children were included in the analysis, of whom 56% were female. The mean duration of exclusive breastfeeding was 29 days, and no child was exclusively breastfed for the recommended six months. Early introduction of complementary foods was common. Elevated lactulose–mannitol ratios, indicating increased intestinal permeability, were observed in about 33% of children. At 24 months, 24% of children were stunted. Children with elevated intestinal permeability had a higher odds of stunting (OR = 2.1; 95% CI: 1.2–3.7) than those with normal L:M ratios. Early introduction of complementary foods was also associated with increased odds of stunting (OR = 1.7; 95% CI: 1.0–3.0).

Conclusion: Short durations of exclusive breastfeeding and early complementary feeding were common and were associated with increased intestinal permeability and a higher risk of stunting. Strengthening breastfeeding support and appropriate complementary feeding practices may help protect intestinal health and improve child growth outcomes.

—Anthropometric status and feeding practices of HIV exposed and unexposed preterm infants admitted to the largest regional hospital in Botswana

Mrs Tshepo Makete¹, Prof Lize Havemann-Nel², Prof Robin Dolman-Macleod²

¹Botswana Defence Force, Gaborone, Botswana, ²North-West University, Potchefstroom, South Africa

Introduction: HIV exposed (HIV-E) preterm infants experience poorer growth, health and survival outcomes than their HIV unexposed (HIV-U) counterparts. This study aimed to determine the anthropometric status and feeding practices of HIV-E and HIV-U preterm infants admitted to Princess Marina Hospital in Botswana.

Methods: A descriptive cross-sectional study with an analytical component. The study consisted of male and female preterm infants meeting the inclusion criteria. Anthropometric measurements and nutritional intakes were monitored for 28 days.

Results: The study enrolled One hundred and twenty-nine (129) preterm infants, 30 (23.3%) HIV-E and 99 (76.7%) HIV-U. The median birth weight was 1505g (1238–1833g). Birth weight did not significantly differ between the groups. HIV-E preterm infants had a lower initial weight loss during the first week of life ($p=0.035$), and a significantly higher percentage of them regained birth weight by day 10 compared to the HIV-U group (56% vs 30.9%, $p = 0.023$). No statistically significant differences were observed in growth velocity and changes in Z-scores. Feeds were started within 24–48 hours in both groups. Formula feeding was higher among HIV-E, whilst HIV-U had higher rates of breastfeeding. Energy intakes were similar for both groups; however, protein intake and protein energy ratio (PER) were higher in the HIV-E group. Protein intake rather than HIV exposure was a significant predictor of weight on days 7 and 21, with the HIV-E group weighing less when controlling for protein intake.

Conclusion: No significant differences were observed in the anthropometric status of HIV-E and HIV-U preterm infants. HIV exposed preterm infants maintained their birth weight better, which was associated with a higher protein intake and PER in the HIV-E group during the first week. Findings from this study contribute to improving the nutritional management of preterm infants to ensure all have an equitable chance to survive and thrive.

—Three decades of the South African National School Nutrition Programme (NSNP): A scoping review of evidence

Ms Mafanato Gladys Maluleka¹, Dr Candice Groenewald^{2,3}, Dr Laurencia Govender¹

¹Discipline of Dietetics and Human Nutrition, School of Health Sciences, University of KwaZulu-Natal, Durban, South Africa, ²Centre for Community-Based Research, Public Health Societies and Belonging, Human Sciences Research Council, Durban, South Africa, ³School of Law, University of KwaZulu-Natal, Durban, South Africa

Introduction: The South African National School Nutrition Programme (NSNP) was established in 1994 as part of broader government efforts to alleviate poverty, reduce food insecurity, and improve access to education in historically disadvantaged communities. Over the past three decades, the programme has expanded in scope and scale, positioning school feeding as both an educational support and social protection intervention. This study aimed to map and synthesise available evidence on the NSNP in South Africa over the past three decades, focusing on programme success, implementation experiences, challenges, and research gaps.

Methods: A scoping review design was employed to systematically identify and synthesise evidence from published literature. Electronic database searches were conducted in SA ePublications, PubMed, and EBSCOhost. The review followed a structured, stepwise approach aligned with scoping review methodology and the PRISMA 2020 guidelines. Studies published between 1994 and 2024 were considered. After screening and eligibility assessment, a total of 26 studies were included in the final analysis.

Results: The findings indicate that the NSNP has contributed to improvements in learner nutrition, school attendance, and overall educational engagement. However, the programme's effectiveness remains constrained by persistent implementation challenges. Food safety concerns were frequently reported and were linked to inadequate staff training, limited knowledge of Hazard Analysis and Critical Control Point (HACCP) principles, poor hygiene practices, and infrastructural limitations such as inadequate access to clean water and electricity.

Conclusion: The review highlights the importance of strengthening the NSNP through sustained investment in infrastructure, standardised and continuous staff training, improved monitoring systems, and context-specific implementation strategies. Further longitudinal research is recommended to evaluate the long-term nutritional, educational, and socioeconomic impacts of the programme.

—Adherence to renal dietary guidelines among chronic kidney disease patients on hemodialysis at a tertiary hospital, Limpopo Province, South Africa

Ms Glenrose Manale¹, Mrs Ditope Rabodiba¹, Ms Sefora Hazel Moshonaneng Makuse¹

¹University of Limpopo, Polokwane, South Africa

Introduction: Adherence to renal dietary guidelines among adults with chronic kidney disease (CKD) on hemodialysis (HD) is low, with limited evidence from resource-constrained rural settings, such as Limpopo Province. This study aimed to evaluate adherence to renal dietary guidelines by assessing dietary intake, fluid status, and selected biochemical markers.

Methods: A quantitative, descriptive, cross-sectional study was conducted among 146 adults with CKD who received HD for more than 3 months at Pietersburg Renal Clinic. Data were collected after obtaining ethical clearance (TREC/1620/2023: PG), approval from the Limpopo Department of Health (LP_2023-12-008), authorisation from the Pietersburg Hospital Chief Executive Officer (4/2/2) and written informed consent from participants. Dietary intake was assessed with the validated quantitative food frequency questionnaire (QFFQ), two 24-hour dietary recall on a dialysis day (DD) and non-dialysis day (NDD) and a 12-item dietary adherence questionnaire. Percentage of interdialytic weight gain (%IDWG), and levels of laboratory markers were used for fluid and biochemical status, respectively.

Data analysis: SPSS (version 30) with $p < 0.05$ showing statistical significance. FoodFinder (version 3) was used to analyse macro and micronutrients. Mean nutrient intakes were compared to 2020 Kidney Disease Outcomes Quality Initiative and 2021 International Society of Renal Nutrition and Metabolism with optimal adherence defined as 90%–110% of targets. Paired-samples t-tests compared DD and NDD intakes.

Results: The QFFQ data demonstrated non-adherence to the recommended macro and micronutrient intakes, which were significantly higher in DD than in NDD ($p < 0.05$). The 12-item adherence questionnaire scored 72%, indicating average adherence. Mean %IDWG was 3% in 86% of participants; nearly all had elevated serum creatinine and parathyroid hormone.

Conclusions: Adults with CKD on HD at a tertiary hospital in Limpopo Province exhibited suboptimal adherence to renal dietary guidelines. These findings can inform context-specific nutritional interventions and contribute to the national and international evidence.

—Burden of obesity and cardiometabolic risk among health professionals in South African public healthcare facilities

Miss Faith Masala¹

¹National Department Of Health, Pretoria, South Africa, ²University of Venda, Thohoyandou, South Africa, ³University of Limpopo, Polokwane, South Africa

Background: Overweight and obesity are major drivers of the increasing burden of non-communicable diseases (NCDs) in South Africa. Health professionals play a key role in promoting healthy lifestyles and supporting NCD prevention; however, their own health status influence their effectiveness as role models and health promoters. This study assessed the anthropometric and cardiometabolic risk profile of health professionals working in public healthcare facilities.

Methods: A cross-sectional study was conducted among 336 randomly sampled health professionals working in mobile clinics, clinics, community health centres and hospitals in Vhembe district, South Africa. Socio-demographic data were collected using structured questionnaires. Anthropometric measurements included body mass index (BMI), body fat percentage and waist circumference. Cardiometabolic indicators assessed included blood glucose, triglycerides, HDL cholesterol (HDL-C), LDL cholesterol (LDL-C), and total cholesterol. Descriptive statistics were used to summarise participant characteristics and health indicators.

Results: Most participants were female (81.5%), with the majority aged 30 to 49 years (60%). Nearly half worked in hospitals (46.4%), followed by clinics (37.8%). Overall, 61.6% of participants were obese and 26.2% were overweight, while only 11.9% had normal BMI. Obesity was substantially higher among female participants (69.6%) compared with males (25.8%). Based on body fat percentage, 67.6% were classified as obese, and 72.0% had very high waist circumference, indicating high levels of central adiposity. Elevated blood glucose was observed in 37.8% of participants, while 50.3% had elevated LDL-C and 48.8% had non-desirable HDL-C levels. Additionally, 29.2% had elevated total cholesterol and 34.9% had high triglyceride levels.

Conclusion: A high prevalence of obesity, central adiposity and cardiometabolic risk factors was observed among health professionals in public healthcare facilities, indicating metabolic crisis and 87.8% obesity rate which should not be ignored. We cannot care for our patients if we are not healthy ourselves. Conflict of interest: None.

—Association of body composition and fat distribution with iron status in young South African women

Ms Busisiwe Mkhabela¹, Dr Mary Uyoga¹, Prof Lizelle Zandberg¹, Ms Marlize Botha¹, Prof Linda Malan¹

¹North-West University, Potchefstroom, South Africa

Introduction: Adiposity-related low-grade inflammation and fat distribution may disrupt iron metabolism potentially leading to functional and absolute iron deficiency (ID). Yet evidence remains inconsistent and few studies have examined fat distribution beyond body mass index.

Objective: To determine the associations between body composition and fat distribution markers with iron status biomarkers and inflammation in young South African women living in JB Marks municipality, North-West Province.

Methods: This ongoing cross-sectional analytical study included 167 healthy, non-pregnant women aged 18-35 years. Body composition was assessed using BMI and body fat percentage, while fat distribution was evaluated using waist- and hip circumferences, waist to height ratio (WHR), and waist-to-hip ratio (WHtR). Iron status biomarkers (haemoglobin, inflammation-adjusted ferritin, and soluble transferrin receptor (sTfR)) and inflammatory markers (C-reactive protein (CRP) and alpha-1-acid glycoprotein (AGP)) were assessed. Spearman's correlations test was used to test for associations between variables.

Results: The mean±SD age of the participants was 23.6 ± 4.2 years, and BMI was 27.5 ± 8.0 kg/m². 29.9% of participants were with obesity and 25.7% with overweight. Elevated body fat % was observed in 49.7% of participants, while 43.1% were anaemic and 25.1% iron deficient. Significant positive correlations were observed between BMI, body fat percentage, WC, WHR and WHtR with Hb, CRP and AGP. Only body fat % correlated significantly with ferritin ($r = 0.184$; $p=0.017$). In contrast, body fat% showed a borderline inverse association with sTfR ($r = 0.184$; $p=0.056$).

Conclusion: Our preliminary results confirm the double burden of overweight/ obesity and anaemia in young South African women; and adiposity-related low-grade inflammation. Furthermore, higher adiposity appears to associate with better iron stores and haemoglobin but these results warrant further investigation.

—Obesity, food addiction, disordered eating, and mental health: Prevalence and associations among university students in Pietermaritzburg, South Africa

Dr Blessing Nkazimulo Mkhwanazi¹, Mr Fanelesibonge Zondo¹, Dr Sizwe Mbona², Dr Bongekile Prudence Mabaso¹

¹University of KwaZulu-Natal, Pietermaritzburg, South Africa, ²Durban University of Technology, Durban, South Africa

Background: South Africa faces a high burden of obesity, with over 40% of adolescents and 20% of children overweight or obese, contributing to significant healthcare and productivity losses. Multiple factors increase vulnerability to obesity, including abnormal eating behaviours such as food addiction (FA), emotional eating, and binge eating, which are closely linked to depression, anxiety, and stress.

Objectives: This study aimed to determine the prevalence of overweight/obesity, FA, and mental health challenges (depression, anxiety, stress) among university students in Pietermaritzburg, South Africa. It further examined relationships between FA, disordered eating patterns, obesity measures, and mental health indicators.

Methodology: A cross-sectional study was conducted among 402 university students aged 18–35 years using convenience sampling. Participants completed validated questionnaires assessing FA (mYFAS 2.0), eating behaviours (TFEQ r18), depression (BDI II), anxiety (GAD 7), and stress (PSS 10). Anthropometric measurements included BMI, waist-to-hip ratio, body fat percentage (PBF), and visceral fat area (VFA), assessed via bioelectrical impedance analysis.

Results: The prevalence of overweight/obesity was 39.6%, with females showing higher BMI. FA affected 13.4% of participants (mild: 5.7%; moderate: 4.7%; severe: 3.2%). High body fat was observed in 60.2%, elevated VFA in 37.8%, and abdominal obesity in 65.7%. Mental health concerns were common, with 35.1% reporting elevated depression, 17.7% severe anxiety, and 26.4% high stress. FA showed significant associations with uncontrolled eating, emotional eating, addiction history, anxiety, and perceived stress. No direct correlations were found between FA and obesity markers, although FA was prevalent in high-risk body composition groups.

Conclusions: University students face substantial health challenges, including high rates of obesity, FA, and mental health issues. The findings highlight the need for comprehensive assessments beyond BMI and support integrated campus-based interventions that address both nutritional and psychological well-being.

—Exploring the association between the digital food environment and consumers' relationship with food in young adult South Africans

Ms Thando Mlambo¹

¹University of South Africa, Midrand, South Africa

Introductions: The Fourth Industrial Revolution (4IR) has transformed various industries, including the food sector, influencing how consumers access food-related information and services. There is an overconsumption of food in the developed world. In the current era of immoderation, consumers are overloaded with information regarding food. The digital food environment, comprising social media, digital marketing, and online food retail, plays a significant role in shaping food perceptions, particularly among Millennials and Generation Z. Given their substantial commercial influence and the rising prevalence of diet-related diseases, understanding young adults' food perceptions in this digital era is crucial.

Methods: This study aimed to investigate the association between the digital food environment and young South African adults' relationship with food. A cross-sectional, quantitative study was conducted using an online questionnaire distributed via social media. A total of 354 respondents were included in the final analysis. Descriptive and inferential statistics, including exploratory factor analysis and regression analysis, were performed using IBM SPSS.

Results: Findings revealed that most respondents (69% female, 85% Black African) actively engage with social media, with 48.6% logging in more than six times daily. While 52.3% use food delivery apps, 59.3% do not utilize grocery delivery services. Exploratory factor analysis identified four key food meaning domains: Aesthetic and Health, Social Connection, Environmental Impact, and Spirituality. Regression analysis showed a negative association between food delivery app use and Aesthetic and Health ($\beta = -0.174$, $p = 0.009$) and between social media activity and Social Connection ($\beta = -0.180$, $p = 0.002$).

Conclusion: These results suggest that while digital platforms shape food perceptions, they may not significantly alter ingrained cultural and personal values. Further research is needed to explore these dynamics in depth.

—Leveraging indigenous and traditional crops for complementary food fortification: Insights from healthcare workers in rural Manguzi, KwaZulu-Natal

Ms Thandeka Mlungwana¹, Prof Muthulisi Siwela², Dr Laurencia Govender¹

¹Discipline of Dietetics and Human Nutrition, School of Health Sciences, University of KwaZulu-Natal, Pietermaritzburg, South Africa, ²Discipline of Agricultural Management, School Agriculture and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa

Introduction: Malnutrition remains a significant public health concern in South Africa, with high rates of stunting and childhood mortality associated with suboptimal complementary feeding practices. Underutilised traditional and indigenous crops may provide a sustainable strategy for fortifying home-prepared complementary foods; however, their acceptance among healthcare workers has not been extensively explored. This study aimed to: (1) identify underutilised nutrient-rich food plants and common home-prepared complementary foods in the Manguzi area, and (2) assess the perceptions of Nutrition Advisors and Community Healthcare Workers (CHWs) regarding the use of indigenous and traditional crops for complementary food fortification.

Methods: A cross-sectional mixed-methods study was conducted in the uMkhanyakude District, KwaZulu-Natal. A total of 114 Nutrition Advisors and CHWs were recruited using purposive sampling. Participants completed a validated isiZulu questionnaire, and a subset (n=70) participated in seven focus group discussions. Quantitative data were analysed using descriptive statistics in SPSS, and qualitative data were analysed thematically using NVivo. Ethical clearance was obtained from the University of KwaZulu-Natal Ethics Committee.

Results: White maize meal porridge was the predominant complementary food (73.7%), indicating a starch-dominant diet. However, nutrient-dense indigenous and traditional crops such as imfino (traditional leafy vegetables) (62.3%), cowpea (31.6%), and pumpkin (28.9%) were widely known and available within the community. Most participants significantly rejected the stigma that indigenous crops are “for the poor” ($p < 0.001$). Qualitative analysis revealed that although traditional plants were commonly consumed in households, they were rarely incorporated into infant complementary diets. However, there was strong support for fortification initiatives, with participants identifying taste acceptability and caregiver education as key determinants of successful implementation.

Conclusion: Locally available indigenous and traditional crops have strong potential to enhance the nutritional quality of complementary foods in Manguzi and similar settings. Successful implementation will require targeted caregiver education and strategies to improve consumer acceptability of fortified foods.

—Barriers to the early identification of refeeding syndrome in hospitalised children with severe acute malnutrition: Perspectives of healthcare practitioners

Mrs Tshegofatso Mogase¹, Dr Annette Van Onselen¹, Prof Stuart Galloway², Dr Nidia Rodriguez-Sanchez²

¹Sefako Makgatho Health Science University, Pretoria, South Africa, ²University of Stirling, Stirling, United Kingdom

Background: Addressing severe acute malnutrition in children is central to the Sustainable Development Goals, yet it remains a leading cause of childhood mortality in low- and middle-income countries. Refeeding syndrome in children with severe acute malnutrition is a poorly understood, potentially fatal complication during stabilisation. Early detection is essential to prevent adverse outcomes. However, recognition by frontline staff remains inconsistent, particularly in resource-limited public hospitals where severe acute malnutrition is common and refeeding syndrome is under-researched. The objective of this study was to explore healthcare practitioners' experiences of identifying refeeding syndrome among hospitalised children aged 6 to 59 months with severe acute malnutrition in public hospitals in the City of Tshwane, Gauteng.

Methods: A qualitative descriptive study design was employed. Using purposive sampling, 20 healthcare practitioners (paediatricians, medical doctors, nurses, and dieticians) from paediatric wards in public hospitals within the City of Tshwane were recruited. Semi-structured interviews were audio-recorded, transcribed verbatim, and anonymised. Data were analysed using reflexive thematic analysis, following Braun and Clarke's approach, supported by NVivo 15 software. An inductive coding approach was applied, allowing themes to emerge from the data. Trustworthiness was ensured through credibility, dependability, and confirmability.

Results: Three key themes emerged: (1) limited awareness and clinical training related to refeeding syndrome; (2) diagnostic uncertainty when distinguishing refeeding syndrome from other complications of severe acute malnutrition; and (3) structural and resource constraints influencing monitoring practices. Participants emphasised the need for clearer clinical guidance and strengthened multidisciplinary collaboration.

Conclusion: These findings highlight important health system and knowledge gaps that may hinder early recognition of refeeding syndrome in children with severe acute malnutrition. Strengthening training and improving guideline implementation could support earlier detection and management of refeeding syndrome in resource-limited settings.

—Caregiver use of added sugar in home-prepared and commercial infant cereals in a district of KwaZulu-Natal, South Africa

Miss Tumelo Molefe¹, Dr Eliza Symington

¹University of South Africa, Pietermaritzburg, South Africa

Introduction: Adequate nutrition during infancy is critical for optimal growth, however added sugar remains a concern despite World Health Organization (WHO) recommendations. This study aimed to investigate the practices of caregivers regarding added sugars in home-prepared and commercial infant cereals in uMgungundlovu District, South Africa.

Methods: This cross-sectional study used a structured questionnaire to collect data from caregivers on added sugar in home-prepared and commercial infant cereals. Consecutive sampling was used to recruit caregivers (n=98) with children (6-24 months) from 4 primary healthcare clinics. Dietary diversity score (DDS) was determined from eight food groups as guided by WHO. Minimum dietary diversity (MDD) was met when ≥ 5 food groups were consumed. A t-test assessed the relationship between the groups of added sugar consumers and DDS. The CAES Human Research Ethics Committee at Unisa granted ethical clearance, and the KZN Department of Health granted permission. Participants gave written consent before data collection.

Results: In this predominantly African (99%) sample, most caregivers were biological mothers (90%), unemployed (75%), single parents (77%) and 36% did not complete matric. Of the children, 58% were 6-12 months and 42% 13-24 months old, mostly girls (57%). Mean DDS was 4.2 (± 1.5) with 39% meeting MDD. Among children who consumed commercial cereal (n=60), 7% received added sugar, whereas those consuming home-prepared cereals (n=90), 66% received added sugar. From the total group, 62% children received added sugar with any of their cereal. There was no difference in DDS between those who received added sugar and those who did not (4.1 vs 4.3, $p=0.561$).

Conclusion: Most of the children did not meet the MDD indicating the risk for micronutrient deficiencies. With almost two-thirds receiving added sugar to their cereal, there is concern about the health implications of energy-dense foods among children while micronutrients may be lacking.

—Food intake and anthropometric nutritional status of children with autism spectrum disorders in Durban, South Africa

Dr Jane Muchiri¹, Ms Maipato Mosia¹, Ms Lizeka Naploes¹

¹University of Pretoria, Pretoria, South Africa

Background: Children with autism spectrum disorders (ASD) are at risk of compromised nutritional status due to feeding problems such selective eating. Data on dietary intake and nutrition status of children with ASD is limited in South Africa (SA).

Aim: We assessed the food intake and anthropometric nutritional status of children with ASD attending an outpatient clinic of a children's hospital in Durban, SA.

Methods: This cross-sectional study involved 87 children with ASD aged 3–14 years (<5 years [n=32] and 5-14 years [n=55]). We used a food frequency questionnaire to assess the frequency of food group consumption (daily, 4–7 times/week, 1–3 times/week, monthly, never) and the items consumed frequently daily (number of times/day) for the whole sample. Participants' weights and heights were measured, and Z scores for anthropometric indices (weigh-for-age [WAZ], height-for-age [HAZ], BMI-for-age [BAZ]) were determined using the WHO Anthro software. Proportion of participants with malnutrition were compared between the two age groups using Chi test.

Results: All the major food groups were consumed. The daily (every day) food group consumption was highest for grains/cereals (99%) and meats (81%) and lowest for fruits (51%) and vegetables (69%). The top ten items consumed daily were: (1) milk on cereal, (2) potato chips, (3) squash, (4-7) (refined grain/cereals), (8) potatoes, (9) chicken, and (10) fruit juice (100%). The daily consumption of sugar-sweetened drinks and unhealthy snacks was common (≥40% of the participants). Undernutrition was almost non-existent. BAZ revealed levels of overweight (9.4 vs. 21.4%; $P>0.05$) and obesity (15.6% vs. 38.1%; $P>0.05$) for children aged < 5 years and 5-14 years respectively and overall 42.5% (overweight or obese).

Conclusion: Although children with ASD consumed food from all the main food groups, their diet quality was sub-optimal, which may be related to overnutrition tendency. Further research is required as well as targeted interventions.

—Regulation and monitoring of the sale of foods and beverages at school tuckshops: A pilot study

Prof Ashika Naicker¹

¹Durban University of Technology, Durban, South Africa

Background: School tuckshops are a key component of the school food environment (SFE) in South Africa, yet they often provide energy-dense, nutrient-poor foods that contribute to unhealthy dietary behaviours among learners. Regulation and monitoring of tuckshop offerings present an opportunity to promote healthier eating and support national school nutrition objectives.

Objective: This pilot study aimed to evaluate the implementation of a healthy tuckshop model and assess its impact on food availability, learner purchasing behaviour, and perceptions of affordability and nutrition awareness.

Methods: A cross-sectional intervention study was conducted in six public schools in the iLembe District, KwaZulu-Natal, representing urban and rural settings across Quintiles 1–5. Two models were implemented: (1) a full healthy tuckshop model in school-owned tuckshops offering only healthy options, and (2) a phased approach in contracted tuckshops, gradually replacing unhealthy items. Baseline assessments documented foods sold, followed by co-development of affordable, acceptable healthy alternatives and an accountability framework. Intervention components included vendor training, promotional materials, choice architecture strategies, and weekly monitoring of sales data. Learner perceptions were assessed post-intervention using structured questionnaires.

Results: Significant improvements ($p < 0.001$) were observed across key indicators. Overall, 78% of learners reported greater availability of healthy foods such as fruits, water, and nuts, while 69% reported increased purchases of healthier options, with fruits most preferred. Nutrition awareness improved, with 78% reporting enhanced understanding and 80% expressing motivation to adopt healthier lifestyles. Behavioural changes included increased water consumption and reduced intake of sugary and fatty foods. However, contracted vendors reported challenges in sourcing affordable, healthy options while maintaining profitability.

Conclusion: The model improved the availability and uptake of nutritious foods and enhanced nutrition awareness, although cost and procurement challenges may affect sustainability; integration into national monitoring systems and standardised vendor contracts is recommended.

—The nutrition knowledge-behaviour gap: Fast-food consumption among adults in Johannesburg

Ms Nokukhanya Ncamane¹, Prof Hema Kesa¹, Dr Janet Adeyinka Adebo¹

¹University of Johannesburg | Food Evolution Research Centre (FERC), Johannesburg, South Africa

Introduction: The rapid growth of fast-food outlets in urban areas has contributed to changing dietary habits and concerns about diet-related non-communicable diseases. Although nutrition education is widely promoted to encourage healthier eating, the extent to which nutrition knowledge influences food choices remains unclear. This study examined the relationship between nutrition knowledge and fast-food consumption patterns among adults in Johannesburg, South Africa.

Methods: A quantitative cross-sectional study was undertaken among 211 adults in Johannesburg's Regions B, C, F and G. A structured questionnaire was used to obtain data from participants on their nutrition knowledge, notions of healthy eating and fast-food consumption patterns. Data was analysed using IBM SPSS (version 29). Descriptive statistics and correlation analysis were used to investigate the relationship between nutrition knowledge and fast-food consumption.

Results: The study included 211 adults from Johannesburg. The majority of the respondents (57.8%) were females, while 37% were male. A significant number of participants (62%) had completed tertiary education. Respondents consumed fast-food frequently, with 63% consuming fast-food once per week, 25.6% consumed fast-food two to three times per week, and 11.4% consuming it more than three times per week. Although participants showed intermediate awareness of healthy eating principles and the health risks associated with fast-food consumption, statistical analysis found no significant relationship between nutrition knowledge and fast-food consumption patterns ($p > 0.05$). These findings suggest that, despite being aware of healthy eating practices, many adults continue to consume fast-food on a regular basis, implying that factors such as convenience, affordability and accessibility may have a greater influence on dietary choices than nutrition knowledge alone.

Conclusion: The findings highlight a knowledge-behaviour gap in dietary habits among adults in Johannesburg. Improving nutrition knowledge alone may not change eating behaviour. Public health strategies should combine nutrition education with behavioural and environmental interventions addressing food accessibility and affordability.

—Fenton 2013 and 2025 growth charts in South Africa: real-world differences and their practical implications

Dr Sanja Nel¹, Prof Ute Feucht^{1,2,3}, Prof Friede Wenhold¹

¹University of Pretoria Research Centre for Maternal, Fetal, Infant and Child Health Care Strategies, Pretoria, South Africa, ²University of Pretoria Department of Paediatrics, Pretoria, South Africa, ³Tshwane District Clinical Specialist Team, Tshwane, South Africa

Background: The 2025 update of the Fenton growth charts for preterm infants introduced substantial changes in the reference trajectories. This study illustrates real-life differences between the Fenton 2013 and 2025 growth charts and points to potential implications thereof in a low- and middle-income country (LMIC).

Methods: 270 preterm South African infants were followed up from kangaroo mother care discharge to one year of age. Using both Fenton charts neonates were classified as small (SGA)-, appropriate- or large-for-gestational age, and weight z-scores (WZ) were compared at birth, term and the lowest WZ reached (WZ nadir). Change in WZ (Δ WZ) from birth to each time point was dichotomised as “low” when < 0.8 at term and < 1.0 at WZ nadir. Associations of SGA and low Δ WZ to undernutrition at one year (underweight, stunting and wasting, age-corrected) were investigated using diagnostic accuracy statistics.

Results: Fenton 2025 identified lower mean birth weight z-scores (-1.19 ± 1.08 vs. -0.52 ± 0.80 , $p < 0.001$) and more SGA (45.2% vs. 19.6%). At term, the difference was small (Fenton 2025 1.25 ± 1.16 vs. Fenton 2013 -1.19 ± 1.07 , difference 0.06, $p < 0.001$); Fenton 2025 had larger mean Δ WZ ($+0.01 \pm 0.85$ vs. -0.62 ± 0.80 , $p < 0.001$) and fewer infants with low Δ WZ (17.1% vs. 38.5%). Being SGA on Fenton 2025 had higher sensitivity for underweight, stunting and wasting at age one year than Fenton 2013 (range: 67.6-77.8% vs. range: 28.6-44.4%), but lower specificity (range: 17.2-57.5% vs. range 52.4-82.9%). No Δ WZ had sensitivity $> 50\%$. Positive predictive values were low ($< 23\%$) for all undernutrition indicators.

Conclusions: Fenton 2025 identified more SGA at birth, while Fenton 2013 identified poorer postnatal weight growth. Neither was strongly associated with one-year undernutrition. Switching from the Fenton 2013 to the Fenton 2025 growth chart would markedly affect care plans and referral patterns, potentially straining healthcare systems. Clear evidence of benefit is needed before changing clinical practice in LMIC.

—The prevalence of malnutrition in infants and children with chronic kidney disease (CKD) in the Dora Nginza Hospital outpatient clinic

Ms Siyanda Ngcelwana¹

¹Nelson Mandela University, Gqeberha, South Africa

Background: Chronic kidney disease (CKD) is increasing globally. Malnutrition in children with CKD contributes to the worsening of kidney function and may lead to poor growth, which can present as stunting, underweight, overweight or obesity.

Aim: To assess the prevalence of malnutrition in infants and children with CKD at a regional hospital.

Methods: A quantitative, descriptive cross-sectional design and was conducted among 60 infants and children aged six weeks to 12 years. Nutritional status was assessed using anthropometric, biochemical, clinical and dietary measurements. Data were analysed using STATA.

Results: Anthropometric markers that were measured included weight, length/height, mid-upper arm circumference, body mass index (BMI) and head circumferences. These markers were then plotted on respective CDC and WHO growth charts. Anthropometric findings concluded that 26.7% participants were underweight, 10.0% were overweight and 20.0% were stunted. Wasting was present in 8.4% of the participants. Only two participants were thin, and 22.2% were obese. Biochemical markers concluded that over 75% of the participants presented with iron-deficiency anaemia, while low albumin levels suggested possible protein energy wasting.

Clinical examinations showed that only two participants classified as undernourished.

Dietary intake was performed using a 24 hour recall and food frequency questionnaire. A low dietary diversity was seen in 13.7% participants, with diets predominantly consisting of starchy foods.

Significant associations were found between stature and GFR; stature and dietary changes; and GFR and weight loss ($p < 0.05$).

Conclusion: Malnutrition remains highly prevalent among children with CKD, characterised by both under- and overnutrition. The high burden of iron-deficiency anaemia and poor dietary diversity highlights the need for nutritional interventions in paediatric renal care.

—Early pregnancy BMI and MUAC as predictors of placental insufficiency in South African women

Ms Suanné Nolte^{1,2}, Dr Marinel Hoffman^{1,2}, Dr Sanja Nel^{2,3}, Dr Helen Mulol^{2,3}, Prof U Feucht^{2,3,4}

¹University of Pretoria - Department of Consumer and Food Sciences, Faculty of Natural and Agricultural Sciences, Atteridgeville, South Africa, ²University of Pretoria - Research Centre for Maternal, Fetal, Newborns and Child Health Care Strategies, , South Africa, ³University of Pretoria - Department of Paediatrics, Faculty of Health Sciences, , South Africa, ⁴Tshwane District Clinical Specialist Team, Gauteng Department of Health, South Africa. ,, South Africa

Introduction: Maternal nutritional status influences placental vascular development and function. Placental insufficiency, indicated by increased umbilical artery (UaA) resistance index (UaA-RI) on Doppler ultrasound, increases the risk of adverse pregnancy outcomes. Possible associations between maternal anthropometry and UaA-RI deserve investigation.

Aims & Objectives: To assess associations of maternal body mass index (BMI) and midupper arm circumference (MUAC) with UaA-RI in South African pregnant women.

Methods: 93 Black/African pregnant women at 24-39 weeks' gestation were conveniently sampled at two Tshwane District clinics. First-visit weight, and current height, MUAC (n=91), and UaA-RI (Umbiflow™ continuous wave Doppler device) were measured. BMI and UaA-RI z-score (UaA-RIZ) were calculated (INTERGROWTH-21st standards). Placental function was abnormal if UaA-RI exceeded the 75th percentile on the Pattinson Umbiflow™ reference curves. Normality was assessed (Shapiro-Wilk) and BMI and MUAC (collinear; r=0.88) were tested in separate linear regression models, adjusting for age, primigravidity, HIV status, and Preeclampsia (PET).

Results: Mean early-pregnancy BMI was 28.72±5.66 kg/m² (2.2% underweight, 37.6% overweight, and 37.6% obese), mean MUAC was 29.6±4.2 cm and mean UaA-RIZ was -0.22±1.38, at mean GA 31.4±2.4 weeks. Women with normal (83.9%) and abnormal (16.1%) UaA-RI had similar BMI (28.85±5.74 vs 28.07±5.38 kg/m², p=0.616) and MUAC (29.7±4.3 vs 29.4±3.9 cm, p=0.827). Adjusted regression found no significant association with UaA-RIZ for BMI (β=-0.028, 95%CI(-0.083, 0.027), p=0.318) or MUAC (β=-0.054, 95%CI(-0.128, 0.020), p=0.152). PET was independently associated with higher UaA-RIZ in the BMI (β=0.96, 95%CI(0.11, 1.82), p=0.028) and MUAC (β=1.11, 95%CI(0.21, 2.01), p=0.017) models, and with abnormal placental function (42.9% vs 11.4%, p=0.009). Models explained little variance in UaA-RIZ (R²=0.062, 0.077).

Conclusion: Maternal BMI and MUAC were not significantly associated with placental vascular resistance and cannot replace direct UaA-RI Doppler measurements for placental insufficiency screening. PET association warrants further investigation.

—Health consciousness drives awareness and consumption of milk kefir as a probiotic food source

Mrs Jacoba Nothnagel¹

¹UNISA, Tswane, South Africa

Introduction: Microflora, including bacteria and yeasts present in milk kefir (MK) and kefir grains, indicative of probiotic qualities, have shown to positively impact the gastrointestinal tract and immune system. It is unknown whether South African consumers are aware of or consume MK, or whether health consciousness plays a role in this. The aim of the study was to determine the relationship between health consciousness and MK awareness and consumption.

Methods: A multi-method study including an online survey (n=165) and qualitative interviews (n=25) was designed. Convenience sampling was applied to recruit adult respondents via social media to complete an online survey. Purposive sampling was used to recruit interview participants from the quantitative sample. Pearson's correlations were used to determine the relationship between health consciousness, awareness and consumption. A combination of inductive and deductive, text-based content analysis was applied during data analysis. Ethical clearance was obtained from the CAES Human Research Ethics Committee at UNISA.

Results: From the predominantly female (75%) study sample (n=165), the majority (68%) had heard of MK, of which 81% had used it (mean intake 18ml per day). Most participants were health conscious (63%), of whom 52% showed correct awareness regarding the health benefits of MK, 81% thought MK contained microorganisms, and 59% thought MK promoted immunity. Positive correlations between health consciousness and awareness [$r(113)=0.337$, ($p<0.001$)], awareness and consumption [$r(81)=0.345$, ($p=0.002$)] and health consciousness and consumption [$r(81)=0.246$, ($p=0.027$)] were found. MK was consumed to increase probiotic intake and promote immunity. Availability and cost deterred consumption. Suggested demand for artisanal MK and grains emerged.

Conclusion: Health consciousness seems to drive awareness and consumption of this probiotic food. Non-consumers appeared eager to test MK if it were available and affordable. Opportunities to increase health consciousness among consumers should be optimised to drive awareness and consumption of healthy food options.

—Mapping the factors influencing food-drug interaction consultation: implications for professional boundaries and scope of practice in nutrition care

Ms Nonhlanhla Mbonani², **Ms Natascha Olivier**^{1,4}, Professor Werner Cordier^{2,3}

¹Private Practice - Lactation Dietitian, Pretoria, South Africa, ²Department of Pharmacology, School of Medicine, Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa, ³African Institute for Data Science and Artificial Intelligence, University of Pretoria, Pretoria, South Africa, ⁴Division of Human Nutrition, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University, Stellenbosch, South Africa

Introduction: Food-drug interactions (FDIs) may compromise therapeutic outcomes and patient safety, particularly when ineffectively addressed in routine practice. Managing FDIs requires interdisciplinary collaboration between health practitioners involved in medication management and nutrition care, however, perceived professional boundaries and scope of practice may influence this process. While practitioner competence is central to FDI consultation, patient behaviours and healthcare system factors also influence how FDIs are addressed. This scoping review mapped and synthesised factors influencing FDI consultation between health practitioners and patients.

Methods: The Joanna Briggs Institute evidence synthesis framework guided a systematic search across PubMed, EBSCOhost, and Web of Science using relevant Medical Subject Headings (MeSH) and free-text keywords. Eligible studies included full-text, primary research examining patient or health practitioner knowledge, attitudes, practices, or perceptions related to FDIs.

Results: Forty-eight studies were included from an initial pool of 391 citations. Most were conducted in high- (n=27) and middle-income (n=17) countries, with limited evidence from low-income settings (n=4) and South Africa (n=4). Pharmacists and nurses were most frequently studied, while physicians and dietitians were underrepresented despite the important role of dietitians in providing dietary guidance related to pharmacotherapy. Research was predominantly cross-sectional and knowledge-focused. Although practitioners and patients recognised FDI's clinical significance, knowledge gaps, inconsistent counselling practices, and variable patient adherence were reported. Pharmacists demonstrated comparatively higher knowledge. Role delineation in FDI counselling was often unclear, with responsibilities largely attributed to pharmacists. Moreover, health practitioners reported inadequate training, low confidence, and systemic constraints. The few intervention studies identified demonstrated improvements in FDI knowledge and practices following targeted education.

Conclusion: Practitioner-, patient-, and system-level factors influence FDI consultation in clinical practice. Clearer interdisciplinary role delineation and strengthened training are needed to support ethical, patient-centred counselling. Greater integration of nutrition expertise within medication management teams may enhance patient education and promote safer medication use.

—Development and nutritional evaluation of value-added noodles incorporating black wheat (*Triticum aestivum* L.)

Dr Imana Pal¹

¹Upes, Dehradun, India

Background: Functional food ingredients like coloured grains are popular due to their high bioactive chemical content. Black wheat, a hybrid of purple and blue wheat, has significant phenolic compounds and anthocyanins, giving it antioxidant and health benefits. These phytochemicals lower diabetes, cardiovascular disease, and obesity risk, according to research. This study examined the sensory, nutritional, and antioxidant properties of traditional and value-added black wheat noodles.

Methodology: Milled black wheat flour was used to make three noodles: Sample 1 was all 100% black wheat flour; Sample 2 was 50% black wheat and 50% whole wheat flour; and Sample 3 was a control with 100% whole wheat flour. The dough was prepared by adding water and resting for 15–20 minutes before being extruded into noodles. The items' proximate composition, total anthocyanin content, antioxidant activity (DPPH radical scavenging), and sensory attributes were assessed using a 9-point hedonic scale.

Results: Three noodle formulations showed significant differences in nutritional, functional, and sensory properties. The 100% black wheat noodles (Sample 1) demonstrated superior nutritional quality with higher protein (13.9%), crude fibre (9.4%), and ash (2.2%) compared with the control. The 50% black wheat noodles (Sample 2) showed moderate nutritional improvement, while the control (Sample 3) had the highest carbohydrate content (77.1%). Anthocyanin content increased with black wheat incorporation, with Sample 1 showing the highest level (42.4 mg/100 g). Sensory evaluation revealed that Sample 2 had the highest overall acceptability (8.18), whereas Sample 1 had slightly lower acceptance due to darker colour and stronger cereal flavour.

Discussion: The results suggest that adding black wheat to wheat noodles improves their nutritional value and antioxidant profile while maintaining customer acceptance. A 50% substitute yielded the best result without compromising functionality. Black wheat has great promise as a functional ingredient in healthier cereal-based diets.

—Unveiling social, cultural and information gaps in nutrition knowledge of local community-produced online food products

Dr Rukudzo Pamacheche¹, Prof Elizabeth Kempen¹, Prof Maretha Van Heerden², Dr Sune Henning²

¹University of South Africa, Johannesburg, South Africa, ²Cape Peninsula University of Technology, Cape Town, South Africa

Introduction: Communities offering local community-produced food (LCPF) contribute to sustainable nutrition and communities by creating and selling food products from locally sourced seasonal produce. While striving for socioeconomic upliftment, the sustainability of small communities forming part of local food and nutrition systems depends on consumers purchasing LCPFs in the online marketing environment.

Objective: To explore consumer consideration of LCPF products presented on online platforms.

Method: The qualitative phenomenological study was designed to purposefully, conveniently and snowball sample participants on LinkedIn who bought locally produced products online. During individual online interviews, twenty participants, contributing towards data saturation, expressed their experience about two LCPF products shared on screen. Data was analysed using Naheem's thematic analysis process. Trustworthiness was applied throughout the study design, incorporating principles of credibility, transferability, confirmability, dependability and authenticity as well as ethical considerations.

Results: Emerging themes reveal challenges rooted in economic, social and cultural aspects of LCPFs. While participants believed in supporting local community livelihoods by purchasing LCPFs, their lack of knowledge of specific food items and their corresponding nutritional information hindered their consumption choice in online buying platforms. Participants were familiar with national derivatives of the projected food items because they culturally and socially resonated with them as South African products. However, participants were hesitant to consider the LCPFs without minimal nutritional information in the forms of nutrition profiles, ingredients used in local processing techniques, disclaimers of potentially sensitive ingredients and health and safety claims of consuming the LCPFs.

Conclusion: This study makes a case for community producers of LCPFs to bridge the cultural and information gaps for LCPF items by providing adequate nutritional information on product and digital labels. Engaging professional nutrition advisers in LCPF processing, packaging and online marketing is crucial for enhancing nutrition knowledge and fostering nutrition and community sustainability.

—Gaps in workplace breastfeeding support research in low- and middle-income countries: A scoping review (2016–2025)

Dr Catherine Pereira-Kotze¹, Dr Bongekile Mabaso², Prof Tanya Doherty¹

¹South African Medical Research Council, Cape Town, South Africa, ²University of KwaZulu-Natal, South Africa

Introduction: Returning to work remains a significant barrier to exclusive breastfeeding to six months, driving early cessation globally. While evidence from high-income countries consistently demonstrates that workplace support improves breastfeeding outcomes, 85% of the global population lives in low-and middle-income countries (LMIC) where work environments, labour protections, and cultural norms differ markedly. Yet the evidence base guiding workplace breastfeeding interventions in LMIC remains poorly mapped. This scoping review sought to characterise the scope, focus, and quality of available research on workplace breastfeeding support in LMIC since 2016.

Methods: Following PRISMA-ScR and JBI guidelines, we systematically searched major databases, identifying 35,049 records. Studies were included if they involved working mothers, their partners, employers, or policymakers, and addressed any aspect of workplace breastfeeding support in LMIC. A total of 128 studies met the inclusion criteria, representing 25 countries.

Results: Among 118 primary studies, 72.9% were work-focused and 59.3% centred on formal sector workers. Thematic analysis revealed four critical gaps: research is frequently decontextualised, with tools inadequately adapted to local realities; study populations disproportionately favour healthcare workers, narrowing generalisability; interventions overwhelmingly target individual behaviour change — building maternal knowledge or resilience — rather than addressing structural determinants such as paid maternity leave or lactation facilities; and vulnerable workers in precarious or informal employment are largely absent from the literature.

Conclusions: Despite growing research volume, the evidence base on workplace breastfeeding support in LMIC remains dominated by individualised, decontextualised approaches that obscure structural barriers and marginalise the most vulnerable workers. Achieving global maternal and newborn health goals demands urgent investment in context-sensitive, equity-oriented research that moves beyond individual behaviour to address the policy and workplace conditions that enable breastfeeding to thrive.

—Dairy snacks or yoghurt alternatives? Nutritional insights into dairy snacks marketed to children in South Africa

Dr Beulah Pretorius¹, Dr Carmen Muller¹, Prof Hettie Schönfeldt¹

¹University of Pretoria, Pretoria, South Africa

Introduction: Fermented dairy products are widely promoted as nutrient-dense foods for children due to their high-quality protein, calcium, and essential nutrients. In South Africa, “dairy snacks” are increasingly marketed as convenient yoghurt alternatives, particularly for children. This study analysed the nutrient composition of commercially available dairy snacks in South Africa to identify nutritional trends relevant to their use as yoghurt alternatives.

Methods: A cross-sectional analytical study was conducted on nine commercially available dairy snack products produced by major manufacturers. Products included low-fat, full-fat, and lactose-free variants. Nutrient composition (macronutrients, sugars, fatty acid profiles, cholesterol, and selected minerals) was determined by duplicate laboratory analyses and reported as average per 100 g. Descriptive statistics were used to summarise the nutrient composition across products.

Results and Discussion: Protein content ranged from 1.46 to 2.21 g/100 g across products, indicating relatively low protein density. Total carbohydrates ranged from 8.0 to 17.0 g/100 g, while total measured sugars varied from 0.56 to 12.40 g/100 g. Sucrose was the predominant sugar in most flavoured products (2.03–10.24 g/100 g), suggesting significant added sugar content. Total fat ranged from 1.0 to 3.2 g/100 g. Fatty acid profiles reflected typical dairy fat composition, with palmitic and oleic acids predominating and trans-fat levels below detectable limits. Calcium content varied substantially between products (53.5–181.1 mg/100 g), indicating differences in dairy solids or formulation practices.

Conclusion: Commercial dairy snacks marketed in South Africa show considerable variability in nutrient composition and generally contain relatively low protein and significant added sugar levels. Compared with traditional yoghurt, these products may provide lower protein density and inconsistent calcium levels. Dairy snacks represent a distinct processed dairy category and should be evaluated carefully when considered as nutritional alternatives to yoghurt for children.

—Early bites for better nutrition: Intervention to increase vegetable intake in South African early childhood development centres

Mrs Sanchia Prinsloo¹, Dr Ros Sambell², Mr Daniel Mashishi¹, Dr Yolande Smit¹

¹Stellenbosch University, Stellenbosch, South Africa, ²Edith Cowan University, Perth, Australia

Introduction: Early childhood is a crucial period for establishing lifelong dietary habits. However, vegetable intake among children remains well below recommended levels. Early childhood development centres (ECDCs) provide an important platform to address this by creating environments that reinforce positive eating behaviours. While strategies to increase vegetable intake have shown effectiveness in high-income countries, evidence from low- and middle-income countries remains limited. This study explored ECDC staff perceptions of vegetable acceptability and evaluated the effectiveness of an intervention to increase vegetable intake in ECDCs in Tshwane, Gauteng.

Methods: A two-phased study was conducted. Phase I was a cross-sectional descriptive study in which a census of ECDC staff (N=72) from 41 randomly selected ECDCs completed an online survey to inform the development of an intervention to improve vegetable intake in children. Phase II involved a pre-post intervention conducted over a one-week period in a subsample of three conveniently selected ECDCs. Spinach nuggets were introduced as a vegetable. The intervention included sensory-based activities, non-food rewards, vegetable gardening, and storybook reading. Changes in intake were assessed using a plate-waste study on day one (pre-intervention) and day five (post-intervention).

Results: Phase I identified key staff-reported strategies to improve children's vegetable intake, including making vegetables fun (49.6%, n=56), providing nutrition education (41.6%, n=47), and fostering positive mealtime environments (35.4%, n=40). In Phase II, analysis of 147 pre- and 141 post-intervention plates showed a 19% reduction in vegetable plate waste (from 37% to 18%) and a twofold increase in mean vegetable intake, from 5.17g (SD 1.56) to 11.40g (SD 3.75).

Conclusion: A context-specific, multi-component intervention can improve vegetable intake among children attending ECDCs. These findings provide preliminary evidence to inform future research and interventions promoting healthy eating habits among South African children and add to the limited evidence on vegetable intake interventions in South African ECDCs.

—Equity on the plate: Factors influencing vegetable provision and menu dietary diversity in South African early childhood development centres

Mrs Sanchia Prinsloo¹, Dr Ross Sambell², Mr Daniel Mashishi¹, Dr Yolande Smit¹

¹Stellenbosch University, Stellenbosch, South Africa, ²Edith Cowan University, Perth, Australia

Introduction: Early childhood development centres (ECDCs) present a valuable opportunity to improve children's nutrition. Meals served in these centres often lack essential nutrients and dietary diversity. In low- to middle-income countries, evidence on strategies to improve vegetable provision among young children is limited. This study aimed to identify factors influencing vegetable provision at ECDCs and assess the dietary diversity (DDS) of displayed menus.

Methods: A descriptive cross-sectional design. 41 ECDCs were randomly selected from the Tshwane South District, South Africa. A census of ECDC staff members was conducted. To assess vegetable provision practices, participants (N=72) completed an online questionnaire. A dietary diversity score (DSS) was calculated using the FAO's 9-group DDS tool.

Results: Carrots (n=54, 75.0%), butternut (n=41, 56.9%), and beetroot (n=24, 33.3%) were served most frequently. The inclusion of vegetables on the menus was influenced by child acceptability (n=56, 77.7%), versatility (n=38, 52.8%), and affordability and availability (n=20, 27.8%). Barriers to vegetable provision included inadequate funding (n=30; 41.7%), children not eating vegetables (n=19, 26.4%), and a lack of resources (n=19, 26.4%). Strategies to enhance vegetable provision as reported by ECD centre staff included parental support (n=44, 61.1%), nutrition education (n=37, 51.4%), improved funding (n=27, 37.5%) and vegetable availability (n=22, 30.6%). Children's acceptance of vegetables was influenced by preference (n=35, 48.6%), limited knowledge (n=39, 54.1%), and availability of unhealthy food options (n=32; 44.4%).

The one-week menus had a mean DDS of 3.9 (SD 0.99). More than half of the centres (n=22, 53.6%) achieved a DDS of ≥ 4 .

Conclusion: Strengthening nutrition education, improving resource allocation, and enhancing collaboration between educators, parents, and health professionals are critical steps toward promoting healthy eating environments in ECDCs. These findings serve as a foundation for future studies aimed at reducing nutritional inequalities and fostering healthy eating habits among South African children.

—More than market noise? Price dynamics of R.214-regulated foods in South Africa

Mrs Odette Roux¹, Dr Bianca van der Westhuizen², Dr Tamryn Frank³, Prof Waldo Krugell⁴, Prof Christine Taljaard-Krugell¹

¹Centre of excellence for Nutrition – North-West University, Potchefstroom, South Africa, ²UNISA, Pretoria, South Africa,

³School of public health - University of Western Cape, South Africa, ⁴School of Economics - North-West University, Potchefstroom, South Africa

Background and objective: Understanding how R.214 regulated food products influence price dynamics, food choices and ultimately public health Nutrition outcomes.

Methods: The analysis uses monthly Consumer Price Index (CPI) data from January 2009 to March 2025 under the COICOP 2018 eight-digit classification. The dataset comprises 23 R.214-regulated food products and 97 non-regulated food products. The analysis includes descriptive analysis, plotting and comparing inflation rates for different categories of food prices. Integration and co-integration tests to identify trends and co-movement of price series. Structural break tests of the policy milestones, as well as an OLS regression model with structural break dummies.

Results: The analysis provides evidence that South Africa's R.214 regulation has had a measurable effect on the inflation dynamics of regulated food categories, particularly at the 2016 mandatory compliance deadline. There is strong co-movement between the price series, with non-R214 inflation explaining between 24% and 65% of the variation in R.214 series. The 2016 compliance deadline produced the largest and most consistent break. The overall R.214 average inflation fell by approximately 1.7 percentage points relative to non-R214 foods from 2016 onwards ($p = 0.027$). Post-2020 breaks reflect the pandemic shock, not policy. All categories show additional breaks in 2020-2023, consistent with the global COVID-19 supply disruption and the subsequent commodity-driven inflation spike. These are unrelated to R.214.

Conclusion: Evidence suggests that the R.214 regulation, more specifically the 2016 compliance deadline, contributed to a relative dampening of inflation in key regulated food categories. The effects are most clearly visible in bread & bakery products and in the 2013 wave for cereals and seasonings. These findings support the view that the regulation achieved its primary objective of reducing salt content without generating large compensatory price increases, and in several categories was associated with a measurable reduction in relative food price inflation.

—Meeting the benchmark? South Africa's R.214 sodium regulation compared with WHO global targets

Mrs Odette Roux¹, Dr Bianca van der Westhuizen², Dr Tamryn Frank³, Prof Waldo Krugell⁴, Prof Christine Taljaard-Krugell¹

¹Centre of excellence for nutrition - North-West University, Potchefstroom, South Africa, ²UNISA, Pretoria, South Africa,

³School of Public Health - University of Western Cape, , South Africa, ⁴School of Economics - North-West University, Potchefstroom, South Africa

Background and objective: Increased sodium intake is a leading cause of hypertension and cardiovascular disease globally. In response, South Africa implemented R.214 to reduce sodium in certain processed foods, and the WHO set a sodium reformulation benchmark for high-sodium food products to promote a more uniform reduction in sodium worldwide. The objective of this study is to evaluate the alignment between South African R.214 sodium reduction targets and the WHO global benchmark standards.

Methods: A comparative policy analysis was used to compare the South African R.214 sodium regulation, with the WHO 2024 sodium benchmark. From these two documents, the sodium content targets were extracted and compared.

Results: The comparative analysis showed heterogeneous alignment between targets set by the R.214 regulation and the WHO global benchmark across food categories. Alignment and interpretation are complicated by substantial differences in category definitions, as the R.214 groups products broadly and lacks the level of specificity used in the WHO benchmark system. In the bread sub-categories, R.214 permitted at least 15% more sodium in comparison to the WHO benchmark. In the cereal category, minimally processed cereals were 300%, and highly processed cereals 43% above the benchmark targets, respectively. In the processed meat category, R214 targets exceeded the benchmark by at least 100%. Other R214 targets exceeding the benchmark included nuts, seeds and kernels (203%), extruded snacks (35-63%), potato crisps (70%) and dry soup powder and gravy powder (192%). The R214 categories that showed alignment of less than 10% variance with the benchmark included: Pretzels (-8%), refrigerated heat-treated meat (8%), Dry noodles with seasoning sachets and stock products at 4% and 0% respectively.

Conclusion: Monitoring and evaluation of existing national sodium regulations, and regular policy updates to align with global best practices are key in prioritising, and achieving national and global sodium-reduction goals.

—Balanced energy-protein supplementation fortified with multiple micronutrients and maternal nutritional outcomes in pregnancy: A community-based study in South Africa

Dr Marita Serfontein¹, Prof. Corinna Walsh¹, Mrs. Riette Nel²

¹Department of Nutrition and Dietetics, University of the Free State , Bloemfontein , South Africa, ²Department of Biostatistics University of the Free State , Bloemfontein , South Africa

Objective: To evaluate the effects of a balanced energy-protein (BEP) supplement fortified with multiple micronutrients (MMN) on maternal nutritional outcomes among pregnant women receiving antenatal care in South Africa.

Design: Community-based intervention study with baseline and follow-up assessments.

Setting: Primary healthcare antenatal clinics in semi-urban communities in Kroonstad, Free State Province, South Africa.

Participants: A total of 205 pregnant women (≤ 21 weeks' gestation) were enrolled. Antenatal clinics were allocated to either a control group receiving routine antenatal supplementation (iron and folic acid) (n=98) or an intervention group receiving an MMN-fortified BEP supplement in addition to routine care (n=107). Haemoglobin and biomarkers of iron, iodine and vitamin A status were assessed at baseline and approximately 36 weeks' gestation. Of the enrolled participants, 142 had biomarker data available at follow-up.

Results: Baseline dietary intake indicated widespread energy and micronutrient inadequacies. Anaemia prevalence at baseline was 26.9% in the control group and 22.7% in the intervention group ($p=0.56$). At follow-up, women receiving the MMN-fortified BEP supplement had lower adjusted odds of anaemia than controls (OR 0.29; 95% CI 0.06 - 1.55; $p=0.15$). Excessive gestational weight gain was less common in the intervention group than in controls (26.7% vs 48.7%; $p=0.04$), although gestational weight gain data were available for only a subset of participants. No significant differences were observed for iodine status, vitamin A status or inflammatory markers.

Conclusions: MMN-fortified BEP supplementation was associated with reduced excessive gestational weight gain and favourable trends in anaemia and iron deficiency. However, incomplete gestational weight gain data limits interpretation of this finding. These results support the potential role of fortified BEP supplementation in antenatal nutrition strategies in resource-constrained settings.

—Assessment of the nutritional composition of home-prepared complementary foods in selected rural and urban communities of KwaZulu-Natal

Ms Hlengiwe Sokhela¹, Prof Muthulisi Siwela², Dr Laurencia Govender¹

¹Discipline of Dietetics and Human Nutrition, School of Health Sciences, University of KwaZulu-Natal, Durban, South Africa, ²Discipline of Agricultural Management, School Agriculture and Science, University of KwaZulu-Natal, Durban, South Africa

Introduction: The timely introduction of nutritious complementary foods alongside continued breastfeeding is vital for optimal growth and development in infants aged six months and older. However, many infants are neither adequately breastfed nor fed nutritionally optimal complementary foods. Effective and sustainable strategies are therefore needed to improve the quality of commonly consumed complementary foods. Assessing the nutritional composition of home-prepared complementary foods is essential for informing such strategies.

Objectives: This study aimed to identify the most popular home-prepared complementary foods fed to infants and assess their nutritional composition in selected rural and urban communities in KwaZulu-Natal, South Africa.

Methods: A mixed-methods, cross-sectional study was conducted among 48 mothers and caregivers of children aged 2–5 years, recruited from the OrCHID study population (MACE and SONKE cohorts) using purposive, stratified sampling by location and child age. Data were collected via telephonic interviews using a standardised English and IsiZulu questionnaire to identify commonly consumed foods and capture detailed recipes. Nutritional composition was analysed using the MRC FoodFinder tool, and SPSS was used for data analysis. Ethical approval was obtained from the University of KwaZulu-Natal.

Results: Complementary foods were typically introduced at 6–<7 months, though 33% (n=16) of infants received solids earlier. White maize porridge (60.4%, n=29) and pumpkin (54.2%, n=26) were the most common. Foods were low in protein (1.3–3.4 g/100 g) and fat (0.5–8.5 g/100 g) with variable energy (270–3090 kJ/100 g), indicating low nutrient and energy density.

Conclusions: Home-prepared complementary foods were dominated by starchy options, with minimal inclusion of fruits, vegetables, or protein sources. Early introduction of complementary feeding, combined with nutrient dilution, further reduced energy density and overall nutritional quality. These findings highlight the need for affordable, home-based strategies to enhance the nutrient content of complementary foods and support optimal infant growth.

—Knowledge and reported treatment of patients with Polycystic Ovarian Syndrome (PCOS) in South Africa

Mrs Hermina (Ermi) Spies¹, Miss Raffaella Braga¹, Miss Mariette Nel¹, Prof Corinna Walsh¹

¹University of the Free State, Bloemfontein, South Africa

Introduction: Women with Polycystic Ovarian Syndrome (PCOS) often experience fragmented healthcare, including delayed diagnosis and patient dissatisfaction due to insufficient multidisciplinary treatment and incomprehensive education by healthcare providers (HCPs).

Methods: A cross-sectional, observational study was conducted from January - April 2024 using a self-administered REDCap questionnaire comprising five demographic, nine knowledge (26 correct options), and 17 treatment questions. Knowledge scored: good 80-100% (≥ 21 points); moderate 60-79.9% (16-20); and poor $< 60\%$ (≤ 15).

Results: Among 533 women with PCOS, median age 31.1 years (IQR: 26.5-34.5), 37.5% had poor knowledge, 47.8% moderate, and only 14.6% had good knowledge. Those with poor knowledge were significantly less likely to identify diagnostic criteria compared to moderate-to-good knowledge: irregular period (30.5% vs. 52.9% & 16.6%; $p < 0.0001$); cystic ovaries (33.9% vs. 49.7% & 16.5%; $p = 0.0002$); abnormal blood values (22% vs. 53.5% & 24.6%; $p < 0.0001$); and physical symptoms (32.6% vs. 51.1% & 16.3%; $p < 0.0001$). Comorbidities (cardiovascular disease; endometrial cancer) were recognised by less with poor knowledge (7.0% vs. 50.3% & 42.7%; $p < 0.0001$; 14.7% vs. 48.6% & 36.7%; $p < 0.0001$ respectively). In total, 77.7% were unaware that overweight and obesity cause PCOS, and fewer with poor knowledge could identify this (10.9% vs. 48.7% & 40.3%; $p < 0.0001$). Seeing 2-3 HCPs before a diagnosis, was reported by 46.2%, while 44.8% reported dissatisfaction with PCOS information received, specifically: lifestyle management (57.1%); medical therapy (54.7%); and long-term complications (62.5%). PCOS causes were never explained to 72.9%. Only 32.6% had consulted a dietitian; of those, only 66.5% were initially referred. More with poor knowledge were less likely to have seen a dietitian (28.9% vs. 53.8% & 17.3%; $p = 0.020$). Moreover, 96.4% weren't referred for psychological support. Disconcertingly, 61.2% used social media (internet) for resources.

Conclusion: Poor knowledge and dissatisfaction regarding education and treatment experiences were reported by women with PCOS in South Africa, along with a limited multidisciplinary healthcare approach.

—Implementation of the Food Insulin Index in determining insulin demand in diabetes: Best practice guidelines

Dr Hildegard Strydom¹

¹Private, Pretoria, South Africa

Introduction: The Food Insulin Index (FII) is an emerging dietary tool that quantifies the postprandial insulin response to foods containing carbohydrates, protein, and fat, offering a more comprehensive alternative to traditional carbohydrate counting.

Objectives: To develop best-practice guidelines for the use of FII in managing blood glucose control in individuals with diabetes.

Methods: Best-practice guidelines were developed using evidence from a scoping review conducted and a retrospective cohort study assessing adherence to personalised nutrition education (PNE) based on glycaemic index (GI), glycaemic load (GL), and FII principles. The association between adherence and glycaemic outcomes was evaluated. Numerical examples are included to demonstrate the calculation of food insulin demand for individual foods and mixed meals.

Results: Evidence indicates that FII predicts postprandial insulin demand more accurately than carbohydrate counting, while diets with high dietary insulin index (DII) and dietary insulin load (DIL) are associated with adverse metabolic outcomes. Based on this evidence, best-practice guidelines emphasise: (1) incorporating FII alongside GI and GL in dietary planning; numerical examples are used to illustrate the application of the FII to calculate the food insulin demand of food items and meals (2) individualising nutrition recommendations according to patient preferences, metabolic status, and treatment goals; and (3) using structured nutrition education to improve understanding of food insulin demand. In the cohort study, higher adherence to these principles was associated with improved glycaemic control, including lower mean blood glucose levels and reduced HbA1c.

Conclusion: The FII represents a practical and evidence-informed dietary strategy for improving glycaemic control. These best-practice guidelines provide a structured approach for implementing FII in clinical settings, emphasising personalised patient education and ongoing monitoring to optimise diabetes management.

—Infant anaemia and haemoglobin levels in high HIV-prevalent settings: findings from the Siyakhula study, South Africa

Dr Phumudzo Tshiambara¹, Dr Marinel Hoffman¹, Dr Heather Legodi², Dr Helen Muloi^{1,3}, Prof Ute Feucht^{1,3}

¹University of Pretoria, Pretoria, South Africa, ²Department of Human Nutrition and Dietetics, Sefako Makgatho Health Sciences University, South Africa, Pretoria, South Africa, ³Maternal and Infant Health Care Strategies Unit, South African Medical Research Council, Pretoria, South Africa, Pretoria, South Africa

Background and aim: Infant anaemia remain a major public health concern, particularly in high HIV-prevalence settings, including South Africa. This study compared the haemoglobin levels and anaemia prevalence between HIV-exposed-uninfected (HEU) and HIV-unexposed-uninfected (HUU) in 6-12 months old infants.

Methods: Descriptive, multiple cross-sectional study stratified by infant HIV exposure status.

Results: The study included 181 infants (HEU=86 and HUU=95). All HEU infants had been started on interventions of vertical transmission prevention of HIV, with 55.8% being initiated on nevirapine prophylaxis. At birth, mean weight-for-age Z-scores (WAZ) were significantly lower in HEU infants than HUU infants (-0.7 ± 0.9 vs. -0.2 ± 1.0 ; $p = 0.003$), and low birth weight infants were more common in HEU than HUU infants (22.1% vs. 12.6%; $p < 0.001$). The mean haemoglobin levels were similar between HEU and HUU infants at 6 months (11.9 ± 1.4 vs. 11.8 ± 1.2 g/dL; $p = 0.996$), 9 months (11.7 ± 1.5 vs. 11.8 ± 1.4 g/dL; $p = 0.440$), and 12 months (11.9 ± 1.2 vs. 11.6 ± 1.2 g/dL; $p = 0.089$). The combined prevalence of infant anaemia was 44.7% (6 months), 62.1% (9 months), and 46.6% (12 months). Although not significantly different ($p > 0.05$), the percentage of anaemia remained more prevalent among HEU than HUU infants at 6 months (26.5% vs. 18.2%), 9 months (33.3% vs. 28.8%), and 12 months (29.7% vs. 16.9%).

Conclusion: Anaemia persists among HEU infants, despite similar mean haemoglobin levels to HUU peers. These findings highlight the need for strengthened nutrition-sensitive and anaemia-prevention strategies in high-HIV-prevalent settings to support optimal health for all infants.

—Gut integrity and iron absorption in young South African women living with obesity and supplemented with omega-3 fatty acids

Ms Pauline Tsikayi¹, Dr Mary A Uyoga¹, Dr Angelique Lewies², Dr Jeannine Baumgartner³, Professor Cornelius M Smuts¹, Dr Isabelle Herter-Aeberli⁴, Dr Lizelle Zandberg¹, Professor Linda Malan¹

¹North-West University, Potchefstroom, South Africa, ²University of the Free State, Bloemfontein, South Africa, ³Kings College, London, United Kingdom, ⁴ETH Zurich, Zurich, Switzerland

Introduction: Obesity (OB) related systemic inflammation may impair gut integrity leading to inefficient iron absorption. The anti-inflammatory properties of long-chain polyunsaturated fatty acids (n-3 LCPUFAs) may improve intestinal cell membrane structure and ultimately iron absorption.

Objectives: To investigate the association of gut integrity with iron absorption in young South African women living with OB and supplemented with n-3 LCPUFAs.

Methods: In this single arm intervention study, 30 young South African women of African descent living with BMI $\geq$ 28 kg/m² were enrolled. The effect of a 12-week daily supplementation with 2.1g n-3 LCPUFA on gut integrity biomarkers (intestinal fatty acid binding protein (I-FABP) and soluble cluster of differentiation 14 (sCD14)) with fractional iron absorption (FIA), systemic inflammation biomarkers (C-reactive protein (CRP), interleukin-6 (IL-6) and alpha-1 acid glycoprotein (AGP)) and hepcidin was evaluated. Cross-sectional analysis of 74 women at screening assessed associations of anthropometric measurements, gut integrity and systemic inflammation.

Results: I-FABP levels increased following n-3 LCPUFA supplementation ($p < 0.001$), but this effect was attenuated after adjustment for AGP and IL-6. Soluble CD14 showed a non-significant decrease. Waist-to-hip ratio (WHR) showed a borderline positive association with sCD14 ($p = 0.055$). Hepcidin was a consistent negative predictor of FIA at baseline and endpoint. Soluble CD14 was a positive predictor of AGP at screening ($p < 0.001$), and this association was maintained after adjustment for body fat percentage ($p < 0.001$). At endpoint, sCD14 positively predicted AGP ($p = 0.007$), CRP ($p = 0.002$) and IL-6 ($p = 0.021$).

Conclusions: In young South African women living with OB, daily supplementation with 2.1 g n-3 LCPUFA for 12 weeks did not improve gut integrity. Gut integrity markers were not significantly associated with FIA, while hepcidin remained the primary regulator of iron absorption. Visceral adiposity, characterised by WHR, was a positive predictor of poor gut integrity.

—Omega-3 LCPUFA supplementation did not reduce inflammation to improve iron absorption in South African women living with overweight or obesity

Dr Mary Uyoga¹, Dr Jeannine Baumgartner², Prof Linda Malan¹, Prof Angelique Lewies³, Prof Lizelle Zandberg¹, Christophe Zeder⁴, Prof Cornelius M Smuts¹, Dr Isabelle Herter-Aeberli¹

¹Centre of Excellence for Nutrition, North-West University, Potchefstroom, South Africa, ²Department of Nutritional Sciences, Faculty of Life Sciences & Medicine, King's College London, London, United Kingdom, ³Department of Cardiothoracic Surgery, University of the Free State, Bloemfontein, South Africa, ⁴Laboratory of Nutrition and Metabolic Epigenetics, ETH Zurich, Switzerland

Background: Young South African women face a double burden of obesity and iron deficiency, with the former predicting the latter. Omega-3 long-chain polyunsaturated fatty acid (LCPUFA) supplementation can reduce inflammation. It is uncertain if this effect extends to adiposity-related inflammation, thereby reducing hepcidin and improving iron absorption.

Objectives: Using stable iron isotopes, we determined the effect of omega-3 LCPUFA supplementation of fractional iron absorption (FIA) from a meal containing iron as ferrous sulfate without and with ascorbic acid (AA).

Methods: In this single-blind, uncontrolled, before–after intervention stable isotope study, 30 South African women aged 18–35 y with body mass index ≥ 28 kg/m², systemic inflammation, and a low omega-3 LCPUFA status, consumed a non-inhibitory meal containing 6 mg iron, without and with AA meal, before and after 3 mo of daily supplementation with 2.1 g omega-3 LCPUFA. At baseline and endpoint, we measured FIA 14 d after consumption of the second meal, iron and inflammation markers, hepcidin, and omega-3 index.

Results: At baseline and endpoint, addition of AA significantly improved FIA from the meal. Median (IQR) FIA before compared with after supplementation was not different for the meal without AA [9.7 (4.3–24.6)% compared with 11.8 (2.8–22.3)%; $P = 0.962$] nor the meal with AA [27.5 (10.6–43.8)% compared with 30.8 (9.6–60.9)%; $P = 0.249$]. Supplementation increased the omega-3 index from 4.61 (4.10–5.11)% to 5.97 (5.48–8.16)% ($P < 0.001$), but did not reduce hepcidin or improve the inflammation and iron status markers. In multiple linear regression analyses, hepcidin was a stronger predictor of FIA than AA.

Conclusions: Addition of AA to the test meal, rather than omega-3 LCPUFA supplementation, improved iron absorption in South African women with overweight or obesity. Despite an increase in omega-3 index after omega-3 supplementation, it remained suboptimal, possibly explaining the lack of reduction in inflammation and hepcidin concentrations.

—Providing nutrition care for those with Cerebral Palsy: Experiences of healthcare workers in the South African public health system

Mrs Anchen Terblanche, Prof Louise Van Den Berg

¹University of the Free State, Bloemfontein, South Africa, ² University of Pretoria, Pretoria, South Africa

Background: Nutritional management of individuals with cerebral palsy is complex and resource-intensive, particularly within the South African public health system, where staffing shortages and infrastructural constraints shape service delivery. Although feeding difficulties and malnutrition are well-documented internationally, limited South African evidence describes how healthcare workers navigate daily nutritional care in under-resourced public institutions. This presentation reports findings from a qualitative study conducted in Mangaung, Free State.

Methods: A phenomenological study was undertaken within a constructivist interpretivist paradigm. Seven healthcare workers were purposively and snowball sampled from a tertiary referral hospital and a specialised psychiatric and rehabilitation facility. Participants included dietitians, professional nurses and care staff directly involved in nutritional assessment and daily feeding support. Semi-structured interviews were audio recorded, transcribed verbatim and analysed inductively using thematic analysis supported by NVivo 15. Data saturation was achieved with seven participants. Trustworthiness was enhanced through member checking and reflexive documentation.

Results: Five interrelated themes emerged. Feeding was described as labour-intensive, high-risk, and emotionally taxing, characterised by prolonged mealtimes, aspiration risk and challenges in anthropometric assessment due to spasticity and contractures. Participants reported significant workload pressures, staff shortages and physical strain that affected well-being and continuity of care. Institutional constraints included limited access to appropriate weighing equipment, specialised seating and advanced assessment tools, resulting in reliance on estimation methods and non-specific growth references. A strong need for ongoing, condition-specific training was identified. Despite systemic limitations, interdisciplinary collaboration was viewed as central to patient-centred nutritional care.

Conclusion: These findings highlight context-specific challenges in delivering nutritional care within the South African public sector and propose practical considerations for workforce development, training and guideline development. These findings may contribute to discussions on equitable nutrition care in resource-limited settings and offer insights relevant to clinicians, educators and policymakers seeking to strengthen services for individuals with complex disabilities.

—The inflammatory and antioxidant potential of habitual diets of female athletes from a university in South Africa

Mrs Georgia Van Der Walt, Prof Arista Nienaber¹, Prof Lize Havemann-Nel¹, Prof Linda Malan¹, Dr Mary A Uyoga¹, Ms Isabelle Herter-Aeberli², Dr Carlien Van Der Merwe¹, Ms Zoleka Zuma¹

¹North-West University, Potchefstroom, South Africa, ² Eidgenössische Technische Hochschule Zürich, Zürich, Switzerland

Introduction: Chronic low-grade inflammation can negatively affect athletes' health, recovery, and immune function. Several factors influence inflammation, including diet. The Dietary Inflammatory Index (DII) and Dietary Antioxidant Quality Score (DAQS) have been developed to assess components of diet quality, specifically potential inflammatory effects and antioxidant adequacy of the diet. However, studies including female athletes are limited.

Objectives: To assess the overall inflammatory and antioxidant potential of the diet, and its relationship with systemic inflammation in female university athletes.

Methods: This cross-sectional study included 72 South African female university athletes. Habitual dietary intake was assessed using a quantified food frequency questionnaire (QFFQ) to calculate the energy-adjusted DII (EA-DII) and DAQS. The EA-DII was calculated and categorised into quartiles. C-reactive protein (CRP) and alpha-1-acid glycoprotein (AGP) were determined by Q-Plex Human Environmental Enteric Dysfunction (11-Plex)™ assay and interpreted with the Q-View™ software. Associations of the EA-DII and DAQS with inflammatory markers were tested using partial Spearman correlations and logistic regression.

Results: The mean EA-DII was 0.88 ± 1.90 , indicating a slightly pro-inflammatory diet. The median DAQS was 3 (3 – 4), with over half of athletes scoring below 3.5, indicating a poor antioxidant intake. Athletes with the most anti-inflammatory diets consumed significantly more beta-carotene, fibre, folic acid, magnesium, riboflavin, thiamine, antioxidant vitamins A, C, and E, tea, flavones, flavonols and flavonones than those with pro-inflammatory diets. 82% of athletes had elevated AGP levels. For each one-score unit increase in the DAQS, participants tended to have 98% lower odds to have elevated AGP (OR: 0.02, 95% CI: 0.00, 1.11, $p = 0.056$).

Conclusion: South African female university athletes' habitual diets were slightly pro-inflammatory with a poor antioxidant quality, which is potentially associated with chronic inflammation. These findings highlight the need for nutrition education strategies and dietary intervention programs targeting female university athletes.

—Monitoring digital food retail: A pilot application of the INFORMAS online grocery protocol in South Africa

Dr Bianca Van Der Westhuizen¹

¹UNISA, Johannesburg, South Africa

Introduction: Online supermarkets are a rapidly expanding component of South Africa's food retail, yet there is limited capacity to routinely monitor their marketing and personalization practices. The INFORMAS online grocery protocol offers a standardised way to characterise these digital environments, but its usability and ability to flag potential over exposure to unhealthy foods require empirical testing.

Methods: We conducted a pilot application of the INFORMAS online grocery protocol in South Africa across four high market share online grocery retailers. Using the INFORMAS data collection spreadsheet, trained assessors captured homepage content (twice, one week apart), the first 25 products on up to three promotional pages, the first 25 products in five key categories (fruits and vegetables, sweet biscuits, confectionery, chips, soft drinks) and five individual product pages per retailer. Assessors also documented personalisation features, marketing strategies and availability of nutritional information.

Results: The tool was implementable across all four retailers using standard browsers, but data extraction was time intensive in some instances and required minor contextual clarifications to category definitions. Homepage and promotional structures differed markedly across retailers: some interfaces displayed only category tiles, whereas others surfaced numerous individual items, including discretionary products, on entry pages. Across promotional and category pages, discretionary foods frequently appeared among the first 25 items, indicating potential risk of higher exposure to unhealthy options within the digital environment, even though some healthier products (e.g. fresh produce, water, legumes) were also promoted.

Conclusion: The INFORMAS online grocery protocol is a usable and policy relevant technology for monitoring South African digital food retail platforms, with refinements needed to streamline data capture and better reflect local product groupings. Routine application of such tools could underpin surveillance systems that track how evolving online retail technologies shape exposure to unhealthy foods and support regulation to create healthier digital food environments.

—Likes, follows and food choices: Social media healthy-eating content and diet quality in South African adults

Dr Bianca Van Der Westhuizen¹

¹UNISA, Johannesburg, South Africa

Introduction: The digital food environment exposes adults to both healthy and unhealthy nutrition messages, yet its impact on diet quality in South Africa is unclear. This study examined associations between engagement with healthy eating social media content and fruit, vegetable and prepared outside the home meal intake.

Methods: In a cross sectional online survey of South African adults (N=403), participants self-reported sociodemographic characteristics, daily fruit and vegetable servings, and the number of meals per week prepared outside the home. Digital exposure variables included following healthy eating social media groups and diet/health influencers. We described intake patterns and used independent t-tests and multiple linear regression to assess associations between digital exposure and dietary outcomes, adjusting for age, gender, income and area of residence.

Results: Participants were predominantly female (70.2%) with mean age 32.6±9.1 years. Only 31.8% met ≥2 fruit servings/day and 14.0% met ≥3 vegetable servings/day, while all participants reported ≥3 meals/week prepared outside the home (mean 5.68±3.56). Overall, 21.6% followed healthy eating groups and 21.1% followed diet/health influencers. Group followers reported slightly higher vegetable intake than non-followers (1.71 vs. 1.47 servings/day; p=0.046), with no differences in fruit intake or outside meals. Following influencers showed no significant associations with any outcome. In adjusted models, income positively predicted fruit intake (p=0.021) and male gender predicted more meals prepared outside the home (β =1.20 meals/week; p=0.001), whereas digital exposure variables contributed minimally and overall models explained only 2–4% of variance.

Conclusion: In this urban South African sample, engagement with healthy eating social media groups was associated with a small increase in vegetable intake, but digital healthy eating content overall showed limited relationship with diet quality or reliance on prepared outside the home meals. Sociodemographic factors, particularly income and gender, more strongly shaped eating patterns, underscoring the need for multi-level strategies that extend beyond digital nutrition messaging.

—Effect of a multi-grain legume-based cereal on growth in young children: Preliminary findings from the StartWell and Grow Study

Dr Cornelia Conradie¹, Prof Lize Havenmann-Nel¹, Ms Theodorah Modise¹, Ms Bonolo Mangoenyane¹, Mr Mpho Phasa¹, Ms Zeldah Luvha¹, Dr Chanelle Kemp¹, Dr Mariaan Wicks¹, Prof Tertia Van Zyl¹

¹North-West University, Potchefstroom, South Africa

Introduction: Malnutrition remains a public health concern in South Africa, particularly among children from low-income communities. Early childhood development (ECD) centres play an essential role in addressing nutrition deficits by providing meals to more than one million children. Improving quality of these meals – particularly breakfast options – may contribute to optimal growth and development. The StartWell and Growth Study investigates the effect of a multi-grain legume-based cereal, which offers a higher protein content than standard ECD breakfast, on growth outcomes among children in the JB Marks district.

Methods: A randomised controlled trial is being implemented across three ECD centres. Eligible children (2–5 years), excluding Grade R learners and those with disabilities and/or food allergies, are randomised into an intervention group receiving a 50 g daily serving of the multi-grain legume-based cereal or the standard ECD breakfast (e.g. maize meal) for eight months. Baseline anthropometric assessments (weight, height, mid-upper arm circumference, and body composition) were completed prior to intervention rollout. Mid-point and end-point measurements will be conducted in July and November 2026.

Results: Preliminary baseline results include anthropometric data from 107 children enrolled from two ECD centres, with recruitment ongoing at a third. Children had a mean age of 3.6 ± 0.8 years; 46 (43%) are boys and 61 (57%) girls. Mean weight- and height-for-age are within normal growth ranges of the WHO growth standards. However, 17 (15.8%) children were stunted, predominantly among 2- and 3-years-olds. No baseline group differences are anticipated; however, growth differences are expected to be observed at mid and end-point.

Conclusion: Baseline findings highlight the nutritional vulnerability among young children. This intervention will provide insight into whether a multi-grain legume-based cereal can positively affect growth outcomes. Improving ECD meal quality through industry-government collaboration may offer a scalable strategy to improve nutrition and long-term health outcomes.

—Nutritional status and household food security of pregnant women: Insights from the NuEMI Study

Dr Janet Carboo¹, Dr Jennifer Ngounda¹, Dr Liska Robb¹, Dr Marizeth Jordaan¹, **Prof Corinna May Walsh¹**

¹University of the Free State, Bloemfontein, South Africa

Objective: To describe the nutritional intake and status of pregnant women in Bloemfontein, and compare these across different household food security categories.

Design: Cross-sectional

Setting: Pelonomi Tertiary Hospital

Participants: 427 pregnant women were interviewed using a standard questionnaire and a quantitative food frequency questionnaire to collect sociodemographic, HIV status, household food security, supplement and dietary intake data. Weight and height were measured using standard anthropometric techniques, and capillary blood was collected by finger-prick for assessment of anaemia, iron status, and inflammation.

Results: 26.7% of participants were food-secure, while 11.5%, 2.1% and 29.5% experienced mild, moderate and severe food insecurity, respectively. 54.5%, 41.7% and 31.1% were obese, anaemic, and iron-deficient. Median energy intake was 8,808 (6,978–9,223) KJ/day, with no significant differences between the food security groups ($p=0.517$). Based on the DRI, 98.1% met the estimated average requirement (EAR) for carbohydrates, but the majority had suboptimal intake of protein (58.3%), fiber (60.9%), pantothenic acid (67.0%), vitamins C (65.6%), D(68.4%), E(59.0%) and K(61.8%), potassium (99.8%), dietary calcium (95.8%) and iron (80.8%). Compared to the moderately and severely food-insecure counterparts, food-secure participants had a higher intake of animal protein ($p<0.001$), total fat ($p=0.014$), monounsaturated fat ($p=0.002$), vitamins B12 ($p=0.014$), C ($p<0.001$) and D ($p=0.003$) and dietary calcium ($p=0.001$). Dietary folate intake was below the EAR in 69.9%, but was higher among severely food-insecure participants at 463.94 (327.39, 609.71) μg than food-secure participants at 378.49 (265.99, 496.15) μg , ($p=0.007$).

Conclusion: The findings show widespread inadequate nutrient intake among pregnant women in Bloemfontein, with food-insecure women showing significantly lower intake of specific nutrients. Given the critical role of these nutrients in maternal and foetal health, dietary interventions including nutrition education, food fortification and supplementation, as well as social interventions to alleviate poverty, remain crucial strategies for improving the nutritional outcomes of pregnant women.

—From the science of nutrient profiling to digital innovation: The development of NutriRank in South Africa

Dr Mariaan Wicks¹

¹NWU, Potchefstroom, South Africa

Introduction: South Africa requires practical tools to support nutrition policies aimed at improving the population's diets. Nutrient profiling classifies foods according to nutritional composition to guide disease prevention and health promotion. Recent draft-food labelling regulations in South Africa propose mandatory front-of-pack warning labels and stricter regulation of health and nutrition claims, both relying on nutrient profiling models to classify foods according to healthiness. However, translating the science of nutrient profiling into accessible digital tools that are user-friendly, transparent and reproducible remains limited.

Aim: To describe the development and progression of NutriRank, a digital nutrient profiling tool designed to support food classification, research, and regulatory application in South Africa.

Methods: NutriRank was developed using a stepwise digital development process. First, two South African nutrient profiling models were integrated into an online calculator through software development. Functionality was then tested by importing an existing packaged food database and evaluating classification outputs across different food categories. Based on these outputs, refinements were made to improve data capturing, output reporting, and food group classification. Findings from Version 1 informed the design of Version 2, which is supported through innovation funding. Planned enhancements include multi-user capability, strengthened data security, and improved reporting features.

Results: NutriRank Version 1 demonstrated proof-of-concept functionality by classifying foods according to two South African nutrient profiling models. The tool was applied to packaged food datasets and has already contributed to postgraduate research and peer-reviewed scientific output. Future development is supported through secured innovation funding for Version 2, aimed at strengthening nutrition research, regulatory application, and broader user accessibility.

Conclusion: NutriRank demonstrates how nutrition research can be translated into an innovative digital tool that supports food policy implementation and contributes to a healthier food environment in South Africa.

—Association between maternal iron status and diet quality measures among pregnant women in Tshwane, South Africa

Ms Chido Zambuko^{1,2}, Dr Jane Muchiri³, Dr Marinel Hoffman^{1,2}, Dr Sanja Nel^{2,3}, Prof Ute Feucht^{2,4,5}

¹Department of Consumer and Food Science, Faculty of Natural and Agricultural Sciences, University of Pretoria, Pretoria, South Africa, ²Research Centre for Maternal, Fetal, Newborn and Child Health Care Strategies, University of Pretoria, Pretoria, South Africa, ³Department of Human Nutrition, Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa, ⁴Department of Pediatrics, Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa, ⁵Tshwane District Clinical Specialist Team, Gauteng Department of Health, Pretoria, South Africa

Introduction: Antenatal anaemia and iron deficiency (ID) remain a public health concern in South Africa (SA), adversely affecting maternal and foetal health. While poor diet quality may contribute to compromised maternal iron status (MIS), this relationship remains underexplored in SA.

Aim: To describe MIS and the associations with diet quality of pregnant women at 28-34 weeks' gestation in Tshwane district.

Methods: This cross-sectional analysis is nested within an ongoing prospective cohort study conducted at two clinics and one hospital in Tshwane District, Gauteng Province. Pregnant women attending antenatal care were conveniently selected. Iron status biomarkers were measured: serum iron, serum ferritin (sF), transferrin saturation (Tsat) and haemoglobin (Hb). Iron status was classified as normal, ID (sF <15 µg/L, adjusted for inflammation), iron deficient erythropoiesis (IDE), (ID +serum iron <8.9 µmol/L +Tsat <16 %) or iron deficiency anaemia (IDA), (Hb <11 g/dL +ID). Diet quality was assessed using the women's dietary diversity score (WDDS; score 0-9, higher scores desirable) and the International Federation of Gynaecology and Obstetrics (FIGO) nutrition score (score 0-6, lower score desirable), which assesses the consumption of food groups providing key nutrients for pregnancy. Logistic regression was used to determine associations between MIS and dietary quality scores.

Results: 100 pregnant women, (mean age 29.2±6.3 years) were included. The proportion of participants with ID, IDE, IDA and anaemia respectively was 35%, 18%, 11%, and 15%. The median scores for FIGO and WDDS were 3 (IQR: 2-3) and 4 (IQR: 3-5) respectively. No significant associations of WDDS or FIGO score with MIS were found.

Conclusions: Compromised iron status in the third trimester remains a problem. Contrary to literature, diet quality and diversity were not associated with MIS in the study cohort. Further research is needed to investigate the underlying causes of ID during pregnancy in this population.

— ORAL PRESENTATIONS

INFORMATION | EDUCATION

—Qhamuka for the first 1000 Days: Community health worker leadership and innovation in addressing child stunting in South Africa

Ms Sheena Chauke¹, Dr Thato Mosidi¹, Miss Someleze Swana¹

¹Grow Great, Johannesburg, South Africa

Introduction: Childhood stunting affects one in three children in South Africa and compromises child development. Community Health Workers (CHW) support families during the first 1000 days through growth monitoring, counselling, and referrals. The Grow Great Champions programme strengthens CHW capacity. This study evaluated associations between CHW visits and child growth outcomes.

Methods: A retrospective chart review analysed 2,757 First 1000 Days client records collected by CHW across four South African provinces (Gauteng, Limpopo, Mpumalanga, and Western Cape) between 2018 and 2023. Anthropometric indicators (length-for-age, weight-for-age, and weight-for-length z-scores) were calculated using WHO Child Growth Standards. Statistical analyses examined associations between nutritional outcomes and CHW visit frequency, while growth-curve modelling assessed catch-up growth trajectories.

Results: The cohort reflects a high-risk population identified through CHW outreach. Stunting prevalence among children under two years was 34%, declining from 38% at six months to 30% at 24 months. Underweight prevalence decreased from 22% to 9.6%, while exclusive breastfeeding at six months reached 80%. Children receiving more than four CHW visits had significantly lower odds of stunting at 24 months than those receiving fewer visits (27% vs. 36%; OR = 0.63, 95% CI: 0.47–0.85). Growth-curve modelling showed stronger catch-up growth among children receiving more frequent CHW follow-up; 51% of children stunted at six months achieved catch-up growth by 18–24 months. Access to social protection, particularly the child support grant, was also associated with reduced stunting risk.

Conclusion: Consistent CHW engagement during the first 1000 days is associated with improved child growth trajectories and reduced stunting risk. Scaling community-based approaches may support efforts to improve maternal and child nutrition outcomes.

—Updating recipe calculations: Advancing the South African food composition database through improved ingredient data

Mrs Joelaine Meryll Chetty¹, Dr Malory Jumat², Dr Averalda Van Graan²

¹SAMRC Biostatistics/SAFOODS, Pretoria, South Africa, ²SAMRC Biostatistics/SAFOODS, Cape Town, South Africa

Introduction: Nutrient values for recipes depend on the accuracy of ingredient data and the methodologies used in recipe calculations. As new analytical nutrient data become available, recipe calculations require periodical updates to ensure that nutrient estimates reflect current food composition information. In South Africa, the diversity of culinary traditions highlights the need for recipe calculation approaches that account for variations in ingredients, preparation methods, and cultural food practices.

Objectives: This work aimed to update recipe calculations within the South African food composition database (SAFCDB) by incorporating newly available nutrient composition data for ingredients and assessing approaches to better reflect the diversity of recipes across South African food cultures.

Methods: Existing recipes within SAFCDB (n=455) were systematically reviewed, recalculated using updated nutrient values (n=313). Recipes were standardised through ingredient verification, alignment to current recipe data sources and yield factor applied. A twelve-step quality assurance checklist was applied to all recipes prior to database acceptance.

Results: Updating ingredient nutrient values resulted in revised nutrient estimates for 455 composite dishes across fifteen (15) food groups. Quality assurance procedures identified inconsistencies in 20% of recipes (n=91), requiring further verification and adjustment of yield factors to improve quality accuracy. Assumption yield factors reported in Cereals (n=24) and Soups (n=15) groups. Country-specific yield factors are to be generated urgently.

Conclusion: Regular updating of recipe calculations is essential to maintain the accuracy and relevance of SAFCDB. Integrating updated ingredient data while recognising culinary diversity strengthens nutrition data systems and supports more representative food composition resources in South Africa.

—Harnessing the value of an NPO-led school program to foster healthy eating behaviours in children

Miss Cari Erasmus¹, Ms Shonisani Nephalama¹, Prof Pamela Naidoo^{1,2}

¹Heart and Stroke Foundation South Africa, Cape Town, South Africa, ²University of the Western Cape, Cape Town, South Africa

Introduction: Childhood obesity affects 390 million children (WHO). In SA, 13.5% of 6-14-year-olds are overweight / obese. The Heart and Stroke Foundation South Africa's (HSFSA) "Live Hearty Mzansi" school campaign (LHMSC) targets schools to promote healthy habits.

Methods: The LHMSC was a multi-component program promoting healthy eating habits, physical activity, and well-being among primary and high school students in Gauteng, SA. The program was built on 4 pillars: Eat Hearty, Play Hearty, Learn Hearty, and Love Hearty. Interventions included nutrition education (interactive class workshops and assemblies) and physical activity sessions (jump rope, exercises with "Hearty" mascot). A CAPS-aligned workbook was developed. Program effectiveness was evaluated through open-ended questions assessing students' understanding of covered topics.

Results: From September 2025 to February 2026, the LHMSC reached 15 schools (8 primary, 7 high), benefiting 15,361 learners. Schools were located in urban settings, including Diepsloot, Thembisa, Soweto, Midrand, Centurion, and Pretoria. Assembly attendance ranged from 520 to 1,743 learners, with an average of 300 learners participating in classroom workshops using program workbooks. Preliminary feedback indicates increased awareness and adoption of healthy habits among learners. Detailed evaluation results are pending.

Discussion: The preliminary results of the LHMSC suggest promising shifts in learners' health habits. The multi-touchpoint approach, including interactive lessons, teacher facilitation, and parent participation, likely contributed to increased awareness and adoption of healthy habits. The workbook system and social media amplification extended the program's reach. Key lessons learned include the importance of language-sensitive delivery, interactive engagement, and logistical planning for large groups. Further analysis of evaluation data will inform refinements and scalability.

Conclusion: The LHMSC, a HSFSA school health initiative, shows promise in promoting healthy habits among South African youth. Sharing implementation experiences highlights the value of adaptive, context-sensitive approaches. Next steps include expansion to more provinces and disseminating lessons learned to inform future HSFSA initiatives.

—Two years of ADSA learn: Reach, engagement, and emerging trends in digital professional learning in nutrition and allied health

Mrs Debby Gates¹, Ms Maria van der Merwe¹

¹Association for Dietetics in South Africa, Cape Town, South Africa

Continuing professional development (CPD) is essential for maintaining professional competence among healthcare practitioners. Increasing clinical workloads, geographic barriers, and limited learning time may restrict access to traditional in-person educational activities. At the same time, the rapid expansion of digital information environments presents new challenges. Reputable digital professional learning platforms, therefore, play an increasingly important role in providing structured, credible, and accessible education. In 2024, the Association for Dietetics in South Africa launched ADSA Learn, an online professional learning platform initially designed to support accredited CPD for dietitians.

This presentation reflects on the first two years of ADSA Learn, examining the reach, engagement patterns, emerging trends in digital professional learning, and the evolution of the platform. The analysis used anonymised administrative platform records to assess participation in learning activities and engagement across different learning formats, expressed as descriptive statistics. At the time of analysis, the platform had n=912 registered users and n=640 active participants across multiple learning activities. The platform hosted 19 activities, including eight article-based modules, six recorded webinars, and five self-guided modules, all including knowledge assessments. Educational content is developed by experienced professionals and undergoes structured internal review before accreditation. Together, these activities provide 29 continuing education units (CEUs), including 16 ethics CEUs. Although the platform was initially developed primarily for dietitians, increased engagement from other healthcare professionals (n=138) was observed.

ADSA Learn occupies a distinct position within the broader CPD landscape. Unlike many digital CPD platforms that primarily facilitate CPD compliance through large educational libraries, ADSA Learn functions as a profession-led professional learning environment focussing on knowledge translation across healthcare disciplines. These observations provide important insights into how such platforms may support accessible CPD as well as interdisciplinary educational ecosystems that translate nutrition science into practice and strengthen professional collaboration.

—Civil society perspectives on commercial determinants of stunting: A case study of the ‘Not Today Nestlé’ campaign

Mrs Angelika Grimbeek¹

¹Heala, Johannesburg, South Africa

Twenty-nine per cent of children in South Africa are stunted, influenced by inadequate dietary diversity and low breastfeeding rates. Despite existing regulations, commercial milk formula companies continue to influence infant feeding practices. This study applies a Commercial Determinants of Health (CDoH) model to a case analysis of the Nestlé Stokvel webinar and the Not Today Nestlé campaign. Document review and expert reflections revealed that the Stokvel webinar – a single marketing event – engaged all levels of the CDoH model, demonstrating how commercial activities may contribute to stunting. The Not Today Nestlé campaign illustrated civil society’s capacity to hold corporations accountable, emphasising the need for relatable messaging, strategic collaboration, and long-term advocacy. The findings underscore how marketing practices distort recommended feeding norms, reinforcing structural contributors to child stunting in South Africa.

—Benchmarking nutrition policies in South Africa: Lessons from the CO-CREATE project

A/Prof Janetta Harbron¹, Ms Debby Gates¹, Dr Ioana Vlad², Dr Kate Oldridge-Turner², Dr Arnfinn Helleve³, Prof Knut-Inge Klepp³

¹Health through Physical Activity and Sport Research Centre, University of Cape Town, Cape Town, South Africa, ²World Cancer Research Fund, London, UK, ³Norwegian Institute for Public Health, Oslo, Norway

South Africa faces a growing burden of obesity and non-communicable diseases, driven by unhealthy dietary practices, physical inactivity, and obesogenic environments. Addressing these challenges require, comprehensive, multi-sectoral policy actions. The NOURISHING policy framework provides a structured approach to identify, implement and monitor nutrition policies. This study aimed to benchmark South African policies related to obesity and dietary intake using the NOURISHING benchmarking tool.

Methods: National nutrition policies in South Africa were identified through a comprehensive scan using a pre-defined methodology and a verification process. The NOURISHING benchmarking tool was developed as part of the CO-CREATE project. The tool includes 41 benchmarks (and associated indicators) across the ten policy areas of the NOURISHING framework with policies being scored against aspirational best-practice standards. Scoring of indicators is based on two attributes: policy action existence (0–50 points) and quality of policy design (0–50 points). Total policy area scores are calculated as the mean of the benchmark scores within each policy area (0-100 points).

Results: The benchmark scores for the following 10 policy areas within the NOURISHING framework will be described: Nutrition labelling; Offer healthy foods; Use economic tools; Restrict advertising; Improve food quality; Set incentives for healthy retail environments; Harness supply chains; Inform the public; Nutrition counselling; and Give nutrition education. Benchmark scores will describe the presence and quality of policy design across policy areas, compare performance across domains (food environment, food systems, behaviour change communication), identify areas of strength and those with gaps or require strengthening. The extent to which policies incorporate adolescent-relevant components, and the presence of implementation, monitoring, and evaluation mechanisms will be summarized.

Conclusion: Findings will highlight potential opportunities to strengthen policy design and implementation, contributing to the development of comprehensive, evidence-informed strategies to improve healthy dietary intake and reduce obesity risk, particularly among adolescents.

—Exploring the voluntary commitments and practices of Danone in supporting healthier food environments and improving population nutrition in South Africa

Mrs Leanne Kiezer¹

¹Danone Southern Africa, Johannesburg, South Africa

Introduction: The food industry plays a central role in shaping food environments and influencing population nutrition in South Africa. As part of the FoodSAMSA project, the voluntary commitments and practices of 29 major food and beverage companies were assessed. Danone ranked first, scoring 83/100 compared with an industry average of 29/100.

Objectives: To examine the commitments and practices that contributed to Danone's leading performance in the FoodSAMSA assessment.

Methods: Companies with ≥5% market share in relevant categories were included. Information on corporate policies and practices across the seven domains of the extended BIA Obesity tool was collected using publicly available sources (Feb 2024 - June 2025) and verified with company representatives (July 2025 - January 2026). The tool assessed transparency, comprehensiveness and specificity of commitments relevant to both under and overnutrition. Danone's scorecard was reviewed to identify strengths and areas for improvement.

Results: Danone's domain scores and key drivers were:

- Corporate strategy (100%) – strong national nutrition commitment with regular reporting.
- Product formulation (100%) – reformulation targets and demonstrated reductions in sugar and saturated fat.
- Nutrition labelling (100%) – full on-pack nutrition labelling and interpretative information online.
- Promotion practices (66%) – restrictions on marketing of unhealthy products to children under 16 across multiple platforms.
- Product accessibility (75%) – commitments to increasing availability and affordability of healthier products, with national reporting.
- Disclosure & lobbying (61%) – published information on philanthropic activities and nutrition education partnerships.
- Double burden of malnutrition (61%) – responsible fortification guided by local nutritional need.

Priority actions included expanding marketing restrictions, improving transparency of external engagements, partnering with retailers to encourage healthier choices and limiting donations to healthy products.

Conclusion: Danone's voluntary nutrition commitments demonstrate industry leadership in supporting healthier food environments while highlighting the importance of continued improvement.

—The revised 2026 Integrated Prevention and Management of Malnutrition (IPMM) guideline

Ms Zandile Kubeka¹, Mr Gilbert Tshitadzi², Dr Sithembile Dlamini-Ngeketho³

¹National Department of Health, Pretoria, South Africa, ²United Nations Children's Fund (UNICEF), Pretoria, South Africa,

³World Health Organization (WHO) , Pretoria, South Africa

Introduction: South Africa's triple (undernutrition, micronutrient deficiencies, and overweight and obesity) burden of malnutrition persists. The Integrated Management of Acute Malnutrition (IMAM) 2015 guideline was revised into a unified Integrated Prevention and Management of Malnutrition (IPMM). The aim was to harmonise, update and strengthen the prevention and management of child malnutrition through a single, integrated national framework aligned with the World Health Organization (WHO) recommendations and routine health service delivery.

Methods: A review and adaptation process synthesised WHO 2013 and 2023 evidence, routine data, and field implementation insights. Iterative technical consultations (national and provincial), clinical expert review, and National Essential Medicines List Committee (NEMLC) inputs produced an integrated package spanning community outreach, Primary health care (PHC), and hospital care; implementation pathways, admission/exit/discharge criteria were standardised.

Results: The IPMM establishes a single, system wide framework with four linked components i.e. Community outreach, Supplementary Feeding Programme (SFP), Outpatient Therapeutic Programme (OTP), and Inpatient Therapeutic Programme (ITP) to improve coverage, timeliness, and continuity of care. It organises routine growth assessment (MUAC, WLZ/WHZ, oedema), clarifies cut off point used to decide where a child should be treated, and specifies revised dose protocols for F 75/F 100/RUTF with targeted micronutrient use. The guideline introduces explicit guidance for infants <6 months, updated admission and discharge criteria, and double duty actions (strengthened breastfeeding, appropriate complementary feeding, risk-based supplementation; caution against indiscriminate high energy products). Community mobilisation details active case finding, referral, and follow up, with linkages to HIV/TB/IMCI, prevention and social protection to reduce relapse and improve accountability.

Conclusion: The IPMM reframes malnutrition management as health systems strengthening integrating preventive and curative services, unifying protocols across levels, and embedding robust Monitoring and Evaluation. This coherent, inclusive evidence-based package is designed to reduce preventable morbidity and mortality and improve equity and efficiency of nutrition services at scale.

—A Delphi-Based validation of consumer food labelling lessons for South African consumers

Mrs Shakun Naicker¹, Professor Ashika Naicker, Dr Heleen Grobbelaar

¹Durban University of Technology, Durban, South Africa

Introduction: Many South Africans struggle to interpret food labels, highlighting a health literacy gap. To address this, Consumer Food Labelling Lessons (CFLLs) were developed and validated using the Delphi method to ensure clarity, cultural relevance, and appropriateness.

Objective: To adapt, refine, and validate food labelling education lessons using the Delphi method.

Methods: Food Labelling Lessons were developed using evidence-based literature and existing educational interventions, drawing on both local and international sources to ensure credible and relevant content. Seven South African experts (dietitians, academics, authors, and industry professionals) were purposively selected as panel members for the Delphi review. Representing four major languages, they provided informed consent and completed two email-based feedback rounds. The Delphi questionnaire was developed from current literature. In round one, it included open-ended and Likert-scale questions to encourage creativity, idea generation, and evaluation of lesson content. A minimum response rate of 70% was required to proceed. Round two incorporated feedback from the first round and was emailed back to experts to evaluate language clarity, comprehension, visuals and activities, scientific accuracy, logical flow, completeness of key labelling components, and alignment with the study objectives.

Results: Consensus was achieved by round two and confirmed in a final round by the research team. Initial feedback called for simpler language, less jargon, and more visuals (≥80% agreement). In round two, ≥85% agreement confirmed successful revisions. Final approval by the research team endorsed the lessons as clear, relevant, and culturally appropriate for South Africans.

Conclusion: This study contributes a validated, contextually grounded food labelling education lessons offering a practical model for improving food labelling literacy and supporting healthier food choices among South African consumers.

—Development and testing of a protocol on preterm infant management at district level hospitals in the Eastern Cape, South Africa

Ms Stacey-Leigh Pullen¹, Professor Annelie Gresse, Professor Wilma ten Ham-Baloyi

¹Nelson Mandela University, Gqeberha, South Africa

Introduction and background: According to the World Health Organisation (WHO), one baby dies every 40 seconds, with preterm-birth complications being the main contributor, worldwide. Special care of preterm newborns to prevent and treat complications of prematurity, is critical to reduce neonatal mortality rates. The establishment of a standardised protocol may result in less deviation and variation in care between practitioners and hospitals, and give guidelines on requirements and sources, especially at district hospitals, where the most births and also where most deaths take place.

The aim of this study was therefore to develop, implement and test a protocol for preterm infant management at district hospitals. The objective discussed in this presentation was firstly to obtain information by determining the availability of physical equipment in neonatal nurseries, identify facility-based practices used and to explore the experiences and knowledge of clinical staff on preterm infant management.

Methodology: For the objective presented here, a quantitative study design was used. The study both quantified and analysed what the existing policies and practices are, by means of a questionnaire.

Results: A total of 153 health care professionals from six districts across the Eastern Cape were interviewed. Types of professionals ($p=0.001$), frequency working with preterm infants ($p=0.002$), in-service training ($p=0.007$) and confidence in working with babies <1.5 kg ($p=0.001$) showed statistical significance in the ability to optimally manage a neonatal nursery. At least 73 (58.8%) of participants were able to operate continuous positive airway pressure (CPAP) machines.

Conclusion: These quantitative results helped created an understanding of the challenges, differences in perspectives, practices and shortages. The information, alongside evidence-based literature, will guide the development of the protocol to attend to the unique challenges these districts face. More in-service training to all professions is paramount to reducing preterm infant mortality.

—Promoting sustainable dietary practices through the implementation of the South African Food Boost University Challenge (SAFBUC)

Ms Sanrika Sahadeo¹, Prof. Ashika Naicker¹, Dr. Onwaba Makanjana¹

¹Durban University of Technology, Durban, South Africa

Introduction: The prevention of non-communicable diseases (NCDs) through increased fruit and vegetable consumption is a cost-effective risk reduction strategy, but it requires behavioural change. The South African Food Boost University Challenge (SAFBUC) was developed using a participatory action research approach to enhance healthy eating behaviours, specifically focusing on fruit and vegetable consumption, among university students.

Methodology: The SAFBUC was developed using a student-led participatory approach and implemented to create healthy recipes and raise awareness about food and nutrition sustainability among students at a university in South Africa. It was adapted from a Food Boost Challenge (FBC) conducted in the Netherlands. Students developed healthy recipes using fruit or vegetables. The sample size consisted of 14 staff members conducting sensory evaluations on the seven products using a 9-point hedonic scale and 74 students selected the top three samples from the seven products that tasted the best to them.

Results: Seven products were developed by students from various faculties at the university in a food laboratory. The products were showcased at a campus event, students and staff were invited to taste samples and obtain information about the sustainability of the products. Students and staff conducted sensory analyses of the developed products. Through sensory analysis the top three products were: fruit and yoghurt popsicles, orange sweet potato long chips, vegetable pasta, tangy delights (yoghurt with strawberries and chocolate popsicles), ultimate veggie burger, sweet potato, avocado and feta muffins and an okra smoothie.

Conclusion: The SAFBUC at the University shows tremendous promise for success at the higher education institution level. The food environment within university campuses has a significant impact on the diet of students. Therefore, policy interventions to change the university food environment and create a sustainable food system are imperative for the future of the youth in South Africa.

—Leading with integrity: Governance reform and ethical leadership in the Association for Dietetics in South Africa

Mrs Maria van der Merwe¹, Ms Jessica Byrne

¹ADSA, White River, South Africa

Professional associations play a critical leadership role in shaping ethical practice, professional identity, and system accountability within nutrition. Over the past five years, the Association for Dietetics in South Africa (ADSA) has undertaken a deliberate process of organisational reform to ensure that its governance structures remain ethical, responsive, sustainable, and fit for purpose in a rapidly changing professional and health system context.

This presentation reflects on ADSA's leadership journey from 2020 to 2025, focusing on how principles of ethical leadership—transparency, accountability, inclusivity, and stewardship—have informed the restructuring of the Association. Key reforms include the rationalisation of membership categories to reduce administrative burden while promoting equity across career stages; the trial and implementation of a streamlined executive committee structure to improve efficiency, cost-effectiveness, and clarity of roles; and substantive constitutional amendments to align governance processes with contemporary professional, financial, and digital realities.

Central to this process was the decision to move from a large executive committee with fragmented portfolios to a smaller core executive supported by defined portfolios, following approval at a Special General Meeting in 2023. This restructuring redistributed workload more equitably, strengthened management oversight, improved decision-making agility, and enhanced accountability through clearer mandates and reporting lines. The introduction of regional representatives in place of traditional branch committees further reflected ethical responsiveness to declining volunteer capacity and shifting member engagement preferences.

This session will share practical lessons on leading organisational change within a professional body, including navigating member consultation, balancing voluntary service with accountability, and embedding ethical practice into constitutions, financial governance, and leadership succession planning. For delegates, the ADSA experience offers a case study in how values-driven leadership can translate into concrete governance reforms that strengthen professional credibility, member trust, and the sustainability of the nutrition profession.

—Care2Care: Building mental wellness capacity among dietitians and other healthcare professionals in South Africa

Mrs Maria van der Merwe¹, Ms Carla Gerryts

¹ADSA, White River, South Africa

Healthcare professionals in South Africa face increasing pressures related to workload, resource constraints, workplace safety, and limited access to structured wellness support, placing them at heightened risk of burnout and mental ill-health. The Care2Care project was developed to address these challenges through a structured, evidence-informed capacity-building programme focused on mental wellness for dietitians and other healthcare professionals.

Led by the Association for Dietetics in South Africa in partnership with the The Nutrition Society (UK) and supported locally by the Perinatal Mental Health Project, Care2Care was funded by Global Health Partnerships. The project adopted a phased approach beginning with a national needs assessment, followed by the development and delivery of tailored training resources.

The needs assessment comprised an online survey completed by 176 healthcare professionals from a range of disciplines. Findings highlighted high levels of burnout, limited time for self-care, significant prevalence of diagnosed mental health conditions, and workplace factors undermining wellbeing, including bullying, safety concerns, inadequate facilities, and lack of employee wellness programmes. These findings informed the design of the Care2Care intervention. Key outputs included: (1) a self-directed online learning course to strengthen mental health literacy and practical coping strategies; (2) a facilitator training guide to support delivery of interactive workshops across diverse healthcare settings; and (3) pilot facilitated workshops integrated into clinical environments. Early evaluation demonstrated increased awareness of stress management, burnout prevention, and self-care strategies among participants, with over 80% showing improvement in mental health knowledge.

The findings highlight the ethical responsibility of leaders to address structural and organisational contributors to burnout—such as unsafe work environments, bullying, and lack of support—rather than locating responsibility solely at the individual level. The project illustrates how ethical leadership is enacted through evidence-informed decision-making, inclusive needs assessment, and the co-creation of contextually appropriate interventions that respect professional dignity and wellbeing.

—Developing DI-FoodLink: An API to link DIASA, a dietary intake assessment application to FoodFinder, a dietary intake analysis program

Ms Dr Averalda Eldorine van Graan^{1,2}, Mrs Joelaine Chetty¹, Dr Malory Jumat¹, Mr Keith Ross¹

¹SAFOODS Division, Biostatistics Research Unit, South African Medical Research Council, Tygerberg, South Africa,

²Department of Global Health, Division of Human Nutrition; Faculty of Medicine and Health Sciences; Stellenbosch University. , Tygerberg, South Africa

Introduction: Accurate dietary intake assessment is central to dietetic research and practice, yet traditional paper-based methods are often inefficient, error-prone, and time-consuming. These limitations prompted the development of DIASA, a digital automated dietary assessment application designed to streamline dietary data collection. However, as DIASA does not include built-in nutrient analysis functionality, an Application Programming Interface (API) was conceptualized to enable seamless integration with the FoodFinder dietary analysis software. This study describes the development and implementation of this API, termed DI-FoodLink.

Methods: A concept business case guided the development process, including detailed effort estimation and project planning. Key components such as purpose, scope, system architecture, high-level development tasks, and functional requirements were systematically defined through extensive team consultation. Particular emphasis was placed on data mapping, structure, and flow, especially regarding non-SAFOODS data captured during 24-hour dietary recalls. A comprehensive functional requirement specification informed the technical design and ensured alignment between DIASA data outputs and FoodFinder input requirements.

Results: The resulting DI-FoodLink API serves as an intermediary framework that facilitates the secure exchange, translation, and processing of dietary intake data into nutrient values. The system enables DIASA, a licensed standalone application, to interface effectively with FoodFinder through defined protocols. Importantly, the API incorporates mechanisms to identify and manage food items not included in the SAFOODS database. Users are guided to classify such entries either by recoding them to existing SAFOODS codes or by generating new alphanumeric identifiers, allowing for accurate nutrient integration within the FoodFinder database. Additionally, new food descriptions, preparation methods, and quantities can be stored and reused for future analysis.

Conclusion: In conclusion, DI-FoodLink provides an efficient bridge between dietary data collection and nutrient analysis, eliminating the need for manual data re-entry. This integration enhances research efficiency, data accuracy, and the overall utility of both DIASA and FoodFinder systems.

—Scaling youth engagement for healthy and sustainable diets: Lessons and opportunities from the Food Boost Challenge Approach

Dr Machteld van Lieshout¹, **MSc Wendy Scholtes-Bos¹**, **MSc Sanrika Sahadeo²**, PhD Ashika Naicker², Dr Sanne I de Vries^{1,3,4}

¹The Hague University of Applied Sciences, Research Group Healthy Lifestyle In A Supporting Environment, The Hague, Netherlands, ²Durban University of Technology, Department of Food and Nutrition Consumer Sciences, Faculty of Applied Sciences, Durban, South Africa, ³Leiden University Medical Center, Health Campus The Hague, The Hague, The Netherlands, ⁴Medical Delta, Delft, The Netherlands

This session explores how the Food Boost Challenge (FBC) can empower young people to drive healthier and more sustainable diets through youth-led innovation in participatory action research (PAR). Beyond health, the approach also has the potential for entrepreneurship/business opportunities for youth. Building on experiences from South Africa and the Netherlands, the session highlights what has been learned from implementing the FBC in different educational and community contexts, and how these insights can support a future, larger-scale South African initiative.

The session opens with two brief presentations: one by a South African researcher who will share lessons from implementing the FBC in a university setting, and another reflecting on experiences from FBC programmes conducted in the Netherlands. These presentations will provide complementary perspectives on how to engage and empower youth, facilitate co-creation, create ownership and foster behaviour change within local food environments.

Each presentation is followed by an interactive component. Participants will first generate ideas using an impact–effort matrix, and then co-design pathways for scaling the FBC in South Africa, exploring essential partners, missing stakeholders, formulate ambition levels, essential programme components, and potential funding opportunities.

The session aims to stimulate cross-sector collaboration and offer practical guidance for advancing youth-led approaches that promote healthy and sustainable diets.

—Introduction of the new dietetics and nutrition board of the HPCSA

Prof Annelie Gresse¹, **Prof Evette Van Niekerk**¹

¹Health Professions Council of South Africa (HPCSA), Pretoria, South Africa

The term of the new members of the Dietetics and Nutrition Board started at the end of 2025. In addition to the new members, there are also some changes in the administrative staff of the Board.

Activities have already started in the various committees, as well as the main Board. One of the first activities was the strategic plan for the next five years. The annual stakeholder engagement also took place in February and was very successful. The process of the development of the new degree, BSc in Dietetics and Nutrition is also continuing, as well as work on Prescription Rights.

As it is important for Dietitians and Nutritionists to know who the members of the Board and the administration are, we would like to introduce ourselves and give a brief overview of the main strategic plans for the period 2026 -2030.

—Effects of adjunct omega-3 long chain polyunsaturated fatty acids in pulmonary tuberculosis patients: A study protocol

Ms Zoleka Zuma¹, Prof Linda Malan¹, Prof Arista Nienaber¹, Dr Simoné King¹, Mr Frank Hayford², Mr Edem Kpewou³, Mr Tumelo Moloantoa⁴, Mr Cornelius M Smuts¹

¹Centre of Excellence for Nutrition (CEN), North-West University, Potchefstroom Campus, Potchefstroom, South Africa,

²Department of Dietetics, School of Biomedical and Allied Health Sciences, College of Health Sciences, University of Ghana, Accra, Ghana, ³Department of Nutritional Sciences, University for Development Studies, Tamale, Ghana,

⁴Perinatal HIV Research Unit, University of the Witwatersrand, Johannesburg, South Africa

Introduction: Tuberculosis (TB) is associated with persistent chronic inflammation driving severe lung damage and disease progression. Omega-3 long chain polyunsaturated fatty acids (n-3 LCPUFA) have anti-inflammatory properties that may attenuate this physiological process. Preclinical pulmonary tuberculosis (PTB) animal models demonstrate that n-3 LCPUFA supplementation optimises treatment outcomes by resolving inflammation, augmenting the host immune response, and attenuating anaemia of inflammation. However, robust clinical evidence in patients with bacteriologically confirmed PTB remains limited.

Objective: This phase II, double-blind, randomised controlled trial will evaluate early bactericidal activity, inflammatory modulation, and safety of n-3 LCPUFA supplementation in adults with newly confirmed drug-sensitive PTB.

Methods: Forty participants aged 18-45 years, presenting to a TB/HIV research unit, in the North West province, South Africa will be randomised to receive standard TB treatment alongside either 2.13g n-3 LCPUFA (eicosapentaenoic acid plus docosahexaenoic acid) or placebo (3g high-linoleic acid sunflower oil) for two months. The primary outcome is sputum culture time to positivity. Secondary outcomes include time to stable culture conversion, proportion converted at 30 and 60 days, inflammatory markers and safety. Exploratory objectives include iron status, body composition, resting energy expenditure, fatty acid composition, plasma lipid mediators, liver function, and related metabolomics and gene expression profiles.

Conclusion: Adjunctive therapy with n-3 LCPUFA may modulate the host inflammatory response and enhance TB treatment outcomes without adverse effects associated with pharmacological anti-inflammatory agents. This trial will generate the first controlled human data on the safety, tolerability and preliminary efficacy of oral n-3 LCPUFA supplementation alongside standard TB care in a South African population. Findings will inform the design of a larger trial and contribute to the emerging evidence base supporting immunonutrition as a feasible, cost-effective adjunct strategy to improve TB cure rates and long-term patient recovery.

— Acceptance, availability and accessibility of reformulated sugar-sweetened beverages in Pietermaritzburg, KwaZulu-Natal, South Africa

Ms Nikita Baijnath, Prof Kirthee Pillay, Dr Nicola Wiles

¹UKZN, Pietermaritzburg, South Africa

Introduction: The rising rates of obesity in South Africa (SA) can be attributed to the high availability, accessibility and excessive consumption of sugar-sweetened beverages (SSBs). In response, SA introduced the Health Promotion Levy (HPL) in 2018 to increase the price of SSBs and discourage purchases. Some SSBs were reformulated to reduce sugar content and reduce tax liability. The sensory qualities of reformulated SSBs (RSSBs) may be different to SSBs, leading to poor acceptance.

Objectives: To assess the acceptability of RSSBs among consumers employed at schools, and the availability and accessibility of RSSBs at major retail grocery stores (MRGSs) in Pietermaritzburg (PMB).

Methods: A cross-sectional descriptive study was conducted at 13 schools in PMB. A sensory evaluation with 192 consumers was used to assess the acceptability of six RSSB samples (zero-sugar and light soft drinks, squash, sports/energy drink, iced tea and flavoured water). A survey was conducted at 10 MRGSs to assess the availability and accessibility of the RSSBs.

Results: The light (3.69 ± 1.116 ; $p < 0.001$) and zero-sugar soft drinks (3.26 ± 1.223 ; $p = 0.005$), and sports/energy drinks (3.51 ± 1.361 ; $p < 0.001$) were acceptable to the consumers, however, the flavoured water (2.28 ± 1.259 ; $p < 0.001$) and iced tea (2.33 ± 1.428 ; $p < 0.001$) were less acceptable. Soft drinks, squash and sports/energy drinks were most available at the MRGSs. A sugar-sweetened soft drink brand was the most accessible, taking the most shelf space (mean = $1773.90 \text{ cm} \pm 3199.93 \text{ cm}$) and situated at all shelf levels (top, middle and bottom).

Conclusion: Consumers were accepting of the reformulated soft drinks and sports/energy drink, which could assist regular consumers of SSBs to reduce their sugar intake. Furthermore, soft drinks, sports/energy drinks and squashes were the most available RSSBs at MRGSs. The results are positive as it indicates that consumers have the potential to purchase and consume beverages with a reduced sugar content.

—Understanding, response and support regarding the health promotion levy among urban consumers employed at schools in Pietermaritzburg, KwaZulu-Natal, South Africa

Ms Nikita Bajinath, Prof Kirthee Pillay, Dr Nicola Wiles

¹UKZN, Pietermaritzburg, South Africa

Introduction: The increasing prevalence of obesity in South Africa (SA) is highly attributed to the high intake of sugar-sweetened beverages (SSBs). Consequently, SA introduced the Health Promotion Levy (HPL) on 1 April 2018 to increase the price of SSBs by approximately 11% to reduce SSB consumption.

Objectives: The study aimed to assess the understanding, response and support regarding the HPL among urban consumers employed at primary and secondary schools in Pietermaritzburg (PMB), KwaZulu-Natal (KZN). The objectives were to determine (i) awareness and perceptions of the HPL, (ii) responses to the HPL in terms of purchasing behaviour, (iii) whether the national COVID-19 level four to five lockdown contributed to increased sugar intake from SSBs, (iv) perceptions and attitudes regarding obesity.

Methods: A cross-sectional descriptive study was conducted in 13 schools where 385 employees (consumers) answered a validated self-administered questionnaire.

Results: Although the majority consumed SSBs (90.1%; n=347), only 41% (n=158) were aware of the HPL (p=0.001). Consumers agreed the HPL would reduce obesity and SSB consumption (p=0.000) and perceptions of the HPL were generally positive (49.3%; n=190) (p=0.000). Consumers were either unaware of the HPL and bought SSBs as normal (52.5%; n=202) (p=0.000) or continued usual consumption after its implementation (14.3%; n=55) (p=0.000). About 54.0% (n=208) of consumers indicated they would choose water if SSBs became unaffordable. During COVID-19 lockdowns, SSB consumption was lower due to financial constraints (22.6%; n=33) (p=0.000). Consumers perceived obesity as a serious concern (p=0.000)

Conclusions: Consumers were positive about the HPL and its potential to reduce obesity and SSB consumption. However, awareness of the HPL was low and SSB purchasing habits remained unchanged, highlighting the need for awareness campaigns.

—Knowledge and practices of healthcare providers in South Africa regarding Polycystic Ovarian Syndrome (PCOS)

Miss Raffaella Braga¹, Prof Corinna Walsh¹, Miss Mariette Nel¹, Mrs Hermina (Ermi) Spies¹

¹University of the Free State, Bloemfontein, South Africa

Background: Despite diagnostic criteria and guidelines for managing Polycystic Ovarian Syndrome (PCOS), significant variations exist in knowledge and practices regarding PCOS among Health Care Providers (HCPs).

Methods: A cross-sectional, observational study was conducted from January-April 2024. A self-administered REDCap questionnaire included demographics, knowledge (25 correct options), and HCPs' clinical practice. Knowledge scored: good 80-100% (≥ 20 correct), moderate 60-79.9% (15-19), and poor $<60\%$ (≤ 14).

Results: Among 160 HCPs, median age 33.5 years (IQR: 27.5-42.8), 55.6% had good knowledge, 35.6% moderate, and 8.8% poor knowledge. Those with poor knowledge of PCOS encountered it less often than those with good knowledge (2.4% vs. 61.0%; $p=0.014$). Diagnostic criteria were not used among 41.9%; of the 58.1% who did, only 64.5% used the correct Rotterdam Criteria (2003&2023). Those with poor knowledge were less likely to identify i) clinical symptoms (irregular periods [$p=0.020$], excess male-patterned hair growth [$p=0.002$], scalp hair-loss [$p=<0.0001$], elevated androgens [$p=<0.0001$], acne [$p=<0.0001$], and cystic ovaries [$p=<0.8954$]); ii) psychological factors (anxiety [$p=<0.0001$], depression [$p=<0.0001$], body image dissatisfaction [$p=0.018$], and reduced quality of life [$p=<0.0001$]); iii) associated comorbidities (insulin resistance [$p=0.0003$], type 2 diabetes mellitus [$p=<0.0001$], cardiovascular disease [$p=<0.0001$], endometrial cancer [$p=<0.0001$], metabolic dysfunction-associated steatohepatitis [$p=<0.0001$], sleep apnoea [$p=<0.0001$], and Hashimoto's disease [$p=<0.0001$]); and iv) lifestyle factors for improved management (weight loss [6.1% vs. 58.1%; $p=0.001$], exercise [6.0% vs. 58.3%; $p=<0.0001$], and low glycaemic diet [4.7% vs. 65.1%; $p=<0.0001$]) compared to those with good knowledge. Fewer with poor knowledge recognised first-line lifestyle management and referred to a dietitian compared to those with good knowledge (7.4% vs. 58.1%, $p=0.010$; 6.2% vs. 65.4%, $p=0.039$, respectively).

Conclusion: Significant knowledge gaps existed among HCPs regarding the correct diagnostic criteria, symptom identification, comorbidities, and first-line lifestyle management of PCOS. Referrals to dietitians for targeted nutrition intervention were low among HCPs with poor knowledge.

—Household dietary diversity and nutritional status of pre-school children in peri-urban and rural Free State, South Africa

Dr Robyn Smith¹, Prof Corlia Janse Van Vuuren¹, Dr Marizeth Jordaan¹, Mrs Angelique Carson-Porter¹, Dr Lucia Meko¹

¹University of the Free State, Bloemfontein, South Africa

Background: Globally, child malnutrition is a major threat to disease development and mortality among children under the age of 5 years who are stunted (22%), overweight (5.6%), and wasted (6.7%), and remains a major problem in South Africa.

Study design: This observational descriptive study aimed to describe the dietary diversity and nutritional status of children in Mangaung and Kopanong in the Free State, from 2022 to 2024. Primary caregivers (n=249) were interviewed, and children's (n=55) anthropometry was measured at conveniently sampled early childhood development centers in Mangaung and Kopanong districts.

Results: Two-thirds of primary caregivers resided in Mangaung, and 41% of all primary caregivers reported having one child in their household. More than half of primary caregivers were unemployed, although fewer than a third reported household income of more than 10,000 rands per month. Two-thirds of primary caregivers reported childcare grants as income, and 45% of children had medium dietary diversity. Although most children had normal weight for age, 3.1% were stunted, while 4.4 % of male children were overweight and 6.5% of female children were obese.

Conclusion: Consequences of low dietary diversity are micronutrient deficiencies, obesity, and an increased risk for developing non-communicable diseases and certain types of cancer. Child support grants & school feeding programs may improve dietary diversity and nutritional status of preschool children in low-income households. Nutrition interventions to prevent obesity and obesity among young children might be necessary.

—Healthcare users' knowledge, attitudes and dietary practices of the South African food-based dietary guidelines in Gauteng Province

Mrs Raisibe Dimo¹, Dr Jane Muchiri², Prof Hettie C Schonfeldt^{1,3}, Prof Joyce Shirinde¹

¹University of Pretoria, School of Health Systems and Public Health, Pretoria, South Africa, ²University of Pretoria, Department of Human Nutrition, Pretoria, South Africa, ³DSI/NRF/NDP SARCHI Chair in Nutrition and Food Security, UN High Level Panel of Experts on Food Security and Nutrition, Pretoria, South Africa

Introduction: Food-based dietary guidelines (FBDGs) are nutritional interventions aimed at improving dietary behaviour and preventing the development of diet-related non-communicable diseases. An unhealthy diet is one of the main risk factors contributing to the scourge of malnutrition and diet-related morbidity and mortality globally.

Objectives: This study assessed the awareness, knowledge, attitudes, and dietary practices of South African food-based dietary guidelines (SAFBDGs) among healthcare users in Gauteng Province, South Africa.

Methods: A cross-sectional study was conducted at 47 selected healthcare facilities in five districts of Gauteng Province. Participants were randomly selected, and a total of 1155 completed the World Health Organization (WHO) knowledge, attitudes, and practices (KAP) validated, pre-tested, self-administered questionnaire. Data was analysed using descriptive and inferential statistics.

Results: Most participants portrayed good knowledge (65.6%), a positive attitude (73.6%), and poor dietary practice (67.5%). Participants were more familiar with the food guide than the 11 SAFBDGs. Knowledge levels differed across sociodemographic factors, with females and participants with higher educational attainment demonstrating higher proportions of good SAFBDGs knowledge ($p < 0.001$). The majority (73.6%) indicated a positive attitude, with (56.3%) expressing confidence in their ability to adhere to FBDGs. Of those with no confidence, 33.7% attributed it to not knowing the FBDGs. Dietary practice indicated low consumption of mixed meals across both genders (~33%). Fifteen percent of participants consumed three or more food groups for meals. All guidelines assessed shifted their rankings. There was low adherence to SAFBDGs and the food guide.

Conclusion: The findings demonstrate that, while FBDGs' knowledge and attitudes are relatively favourable, dietary practices remain suboptimal across the study population. These findings underscore the need for nutrition interventions that move beyond awareness and focus on practical, context-specific strategies to support sustained dietary behaviour change. Nutrition policy realignment related to FBDGs should be prioritised, implemented, and monitored.

—Nutrition education programmes in pregnant women: Results from a scoping review

Mrs Janke Draper², Dr Marizeth Jordaan², Prof Corinna Walsh²

¹Mpumalanga Department of Health, Standerton, South Africa, ²University of the Free State, Bloemfontein, South Africa

Introduction: Nutrition education is a cornerstone of prenatal care, offering pregnant women personalised guidance and support to meet their nutritional needs. It empowers women to make informed dietary choices that contribute to their well-being and their offspring's healthy development. Nutrition education promotes positive pregnancy outcomes by addressing misconceptions, providing practical advice, and tailoring recommendations to individual preferences and circumstances. This proactive approach helps reduce the risk of complications, such as nutrient deficiencies or excessive weight gain, and fosters long-term health for mother and child. This scoping review explores nutrition education programmes for pregnant women, as no such review has been published.

Methods: The scoping review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. A comprehensive search of electronic databases, including PubMed, Medline, and Google Scholar, was performed for studies published between 2015 and 2025. Studies were included if they reported nutrition education programmes aimed at pregnant women. References from selected databases were imported into Rayyan. Two reviewers independently screened titles, abstracts, and full texts. The selection process was documented using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

Results: The database search identified 756 records, of which 100 studies met the inclusion criteria after duplicates were removed and screening and eligibility assessment conducted. Studies were across high-, low-, and middle-income countries and included several intervention formats (group education sessions, individual counselling, digital platforms, and community-based programmes). Most programmes focused on improving dietary diversity, micronutrient intake, and healthy gestational weight gain.

Conclusion: The findings highlight that nutrition education programmes during pregnancy are widely implemented and address key aspects of maternal health. Yet, evidence suggests the value and impact of structured nutrition education within antenatal care remain under-recognised and warrant greater emphasis in maternal health programmes.

—Rising diabetes and nutrition transition in South Africa: Exploring Millet-Based solutions through a Multimethod Study

Miss Devishree Dunna¹

¹University of Johannesburg, Johannesburg, South Africa

Background: Rapid nutritional transition in urban South Africa drives rising diabetes prevalence, underscoring the need for sequenced epidemiological assessment and preventive interventions. This study aims to determine trends in diabetes prevalence in South Africa, assess the Nutrition Transition, and evaluate the effects of millets in diabetes management.

Methods: A three-phase multimethod study was conducted. Phase 1 involved secondary data analysis of the South African Demographic and Health Surveys (SADHS) from 1998 (N = 13,827) and 2016 (N = 15,292). Phase 2 comprised a cross-sectional study (N=200 child–caregiver dyads) in Gauteng, South Africa. Phase 3 involved a systematic review and meta-analysis examining the effects of millet-based foods on glycemic outcomes in diabetes management. Data analysis was conducted using SPSS version 31.

Results: Clinically diagnosed diabetes prevalence rose from 2.9% (1998) to 4.4% (2016), increasing to 22% with HbA1c criteria. In the cross-sectional study, 26.2% of children and 36.4% of adults were overweight or obese. Elevated body fat (20%) and visceral fat (18.5%) were observed among adults, while 26% of children were overnourished. Exposure to ultra-processed foods was notable, including bakery products (11.8% in children; 11.3% in adults), energy-dense foods (10.8% and 11.3%), sugar-sweetened beverages (9.2% and 11.3%), and ready-to-eat foods (5.6% and 9.7%). The meta-analysis showed that millets significantly reduced postprandial glucose iAUC (Cohen's $d=-2.10$, $p<0.001$), with finger millet strongest ($d=-4.77$); and long-term millet intake showed a fasting glucose improvement ($d=1.05$, $p=0.02$).

Conclusion: South Africa's rising diabetes prevalence and shift to energy-dense processed foods highlight the role of changing food environment in lifestyle diseases. Millets offer a culturally appropriate and sustainable dietary strategy for diabetes prevention and management.

—Assessing selected complementary feeding practices using two behaviour change tools among mothers of infants 6-23 months in Ibadan, Nigeria

Ms Abolade Fabunmi¹, Dr Ejoh Shirley¹, Dr Josephine Adeolu²

¹Department of Human Nutrition and Dietetics, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria, ²Institute of Child Health, University College Hospital, Ibadan, Nigeria

Background and Aims: Inadequate complementary feeding contributes significantly to malnutrition among infants and young children in Nigeria. Despite awareness of feeding practices, many mothers struggle to prepare nutrient-dense pap that meets the minimum dietary diversity (MDD) requirements.

Using the Capability, Opportunity, Motivation (COM-B) model and the Theoretical Domain Framework (TDF), this study examined the behavioural factors influencing mothers' pap preparation and their association with achieving MDD among infants aged 6–23 months in Ibadan.

Methods: A cross-sectional explanatory sequential mixed-methods approach was applied among 170 mothers of infants aged 6–23 months attending child welfare clinics. Quantitative data were analysed using descriptive statistics, Spearman's rho, and binary logistic regression ($p < 0.05$), while qualitative data from focus group discussions and in-depth interviews were thematically analysed in NVivo 15. The qualitative findings were used to further explain the quantitative findings.

Results: While 69.9% of infants achieved MDD, 65.1% met MMF, and 53.4% met MAD. Capability ($\rho = -0.204$, $p = 0.014$) and opportunity ($\rho = -0.188$, $p = 0.023$) were negatively correlated with MDD, whereas motivation showed a positive relationship ($\rho = 0.229$, $p = 0.005$). Motivation (OR = 1.820, $p = 0.001$) was the only positive predictor of MDD. Qualitative findings revealed that although mothers were aware of local ingredients, many lacked preparation skills and encountered resource constraints.

Conclusions: Motivation was the strongest behavioural enabler of optimal complementary feeding, yet its continued effectiveness depends on adequate capability and opportunity. Behaviour change interventions integrating cooking demonstrations, improved food access, and enhanced psychosocial motivation are essential for improving infant and young children's dietary diversity in Nigeria.

—Smartphone-based assessment of FAFH consumption and NCD risk in urban India and South Africa

Mr Swapnil Godbharle¹, Prof. Hema Kesa¹, Dr. Angeline Jeyakumar^{1,2}

¹Food Evolution Research Centre (FERC), University of Johannesburg, Johannesburg, South Africa, ²Department of Nutrition, University of Nevada, Reno, USA

Introduction: Urbanization has led to increased reliance on Food Away From Home (FAFH), which is associated with higher energy intake and lower nutritional quality. However, comparative research on FAFH and non-communicable diseases (NCDs) in different urban contexts is limited. This study aims to analyze FAFH consumption patterns, determinants, and health implications in two urban cohorts: Pune, India, and Johannesburg, South Africa.

Methods: A cross-sectional case-control study involved adults aged 25 to 45 years, categorizing participants as cases (physician-diagnosed NCDs) or controls (no NCDs). The Indian cohort included 1,000 individuals (330 cases, 670 controls) from Pune, while the South African cohort comprised 442 participants (146 cases, 296 controls) from Johannesburg. Dietary intake was monitored for five days using the “FoodLog” app, recording meals and FAFH consumption. Sociodemographic and behavioural data were collected via structured questionnaires. Multivariable logistic regression was used to estimate odds ratios for FAFH consumption determinants and their association with NCD status.

Results: The prevalence of FAFH consumption was comparable in India (35.2%) and South Africa (33.3%). In the Indian cohort, FAFH consumption was associated with male gender (adjusted odds ratio [AOR] 1.67), living alone (AOR 1.59), alcohol consumption (AOR 1.84), smoking (AOR 1.73), and physical inactivity (AOR 1.48), correlating with increased odds of NCDs (AOR 1.48). Conversely, in the South African cohort, factors associated with FAFH consumption included female gender (AOR 1.52), postgraduate education (AOR 2.05), physical inactivity (AOR 2.44), and low vegetable intake (AOR 1.33), with a lower association with NCDs (AOR 1.12).

Conclusion: The prevalence of FAFH consumption is significant in both urban settings and is related to an elevated risk of NCDs. However, the socio-demographic factors influencing this relationship and the strength of the association differ between the two locations, underscoring the need to understand local food environments to formulate effective public health strategies.

—Exploring the role of invasive redclaw crayfish (*Cherax quadricarinatus*) in Zambia's nutrition-sensitive agrifood policies

Ms Thandie Bubala Hamaimbo¹, Dr Elizabeth Mkandawire¹, Dr Marinel Hoffman¹, Professor Henrietta de Kock¹

¹University of Pretoria, Pretoria, South Africa

The *Cherax quadricarinatus* (Australian Redclaw Crayfish (ARC)) has invaded Zambia's freshwater bodies. The invasion, which negatively impacts ecosystems and biodiversity, has been a cause for concern among fishermen, communities, and policymakers who rely on these water bodies for food, livelihoods, and other essential resources. This study explored the potential for the consume-to-control approach as a potential strategy to manage the population and spread of ARC.

This was a retrospective, qualitative policy-landscape analysis study. The participants included policymakers and actors across the ARC value chain in Zambia. Data were collected through 5 focus group discussions (25 participants) and a review of 12 existing policy documents related to ARC management and nutrition. Data was thematically analyzed following a deductive approach.

The study findings indicate interest in including and promoting ARC as a food source and a component of local food systems, provided there is buy-in from consumers and policymakers. Cultural norms, the perception of ARC, and the lack of guidelines on harvest and consumption were reported as key barriers to the consume-to-control approach. Such policies and interventions should be centred on environmental sustainability, especially in a low- to medium-income country such as Zambia, which is grappling with poverty and the triple burden of malnutrition.

The proposed consume-to-control strategy is a cost-effective way to manage the species while providing economic benefits, a protein-rich food source, and diversification of local protein supply chains. These factors underscore the need for evidence-informed dietary impact, strategic messaging, environment- and nutrition-sensitive policy frameworks that influence the community's perceptions and those of other stakeholders, while managing governance challenges and ARC trade-offs. Zambia's experience with ARC and the current nutrition-sensitive agrifood policy landscape provides another dimension to the acclaimed ecological perspectives and is likely to resonate with neighbouring countries that are invaded by these species.

—Socio-demographic factors associated with infant feeding practices of mothers or caregivers in Mangaung, Free State

Dr Marizeth Jordaan¹, Ms Chantal Theart¹, Prof Corinna Walsh¹

¹University of the Free State, Bloemfontein, South Africa

Background and aims: Adequate nutrition during infancy and early childhood is critical for growth and development. Infant feeding practices should align with current infant feeding recommendations. This study aimed to describe the sociodemographic background and infant feeding practices of mothers and/or primary caregivers and associations between sociodemographic variables and feeding practices.

Methods: A quantitative cross-sectional study was conducted among 150 volunteering mothers and/or primary caregivers with their infants visiting a Community Health Centre in central South Africa for their 10-week, 14-week, and/or 6-month immunisations. Data were collected using a questionnaire during a structured interview.

Results: High unemployment rates, low education levels, and poor sanitation were observed. At the time of data collection, two-thirds of the infants were exclusively breastfed (62%). For 12% of infants, exclusive breastfeeding was initiated at birth but discontinued during the first six months postpartum. Statistically significant associations were noted between infant feeding practices and factors associated with poverty, such as level of education ($p=0.0109$), employment status ($p=0.0378$), receiving a child support grant ($p=0.0008$), housing status ($p=0.0010$), water access ($p=0.0012$), and electricity access ($p=0.0020$). In circumstances of extreme poverty, exclusive breastfeeding was the preferred feeding choice.

Conclusions: A high level of poverty was observed among the participants. Significant associations were found between circumstances of extreme poverty and exclusive breastfeeding. Despite high exclusive breastfeeding initiation rates at birth, results demonstrated that, despite breastfeeding being the recommended universal infant feeding practice, a high proportion of mothers fail to exclusively breastfeed their infants for the full recommended first six months.

—Human milk feeding and kangaroo mother care in very low birth weight infants: Evidence from a Johannesburg neonatal unit

Mrs Nokuthula Mabena¹, Associate Professor Robin Claire Dolman-Macleod, Associate Professor Karl Gunter Technau, Associate Professor Arista Nienaber, Dr Madri Jansen van Rensburg, Dr Joy Fredericks

¹, Johannesburg, South Africa

Background: Very low birth weight infants (VLBW) are frequently separated from their mothers after birth due to prematurity complications, disrupting bonding and delaying breastfeeding. For infants weighing <1200g, early access to the mother's milk is critical. Access to donor milk and prompt referral to Kangaroo Mother Care (KMC) improve outcomes. This study aimed to evaluate clinical outcomes and feeding practices of VLBW infants in Rahima Moosa Mother and Child Hospital (RMMCH) in Johannesburg, South Africa.

Methods: We conducted a retrospective cross-sectional review of live-born VLBW infants admitted to RMMCH, Johannesburg, between 1st January 2020 and 31st December 2023. The data summarising the admission was captured at discharge using Research Electronic Data (REDCap), hosted by the University of Witwatersrand. Descriptive statistics, chi-square tests, t-tests, and ANOVA were used for statistical analysis.

Results: We included 1127 VLBW neonates, with no significant gender difference. Most were born between 28 and <32 weeks' gestation, 404 (38%) weighed 1000–1200g, and 421 (40%) weighed 1201–1400g. The majority of mothers, 440 (42%), were aged 30–40, and 763(74%) were HIV-negative. Among 823 mothers with documented feeding intentions, 791 (70%) planned to breastfeed exclusively. The median hospital stay was 26 days (IQR: 15–38). Of the 787 (70%) infants discharged home, 532 (80%) were exclusively breastfed at discharge. Of the 432 KMC admissions, 421(97%) were discharged home. Most NEC I cases were mild, with 221 (20%) of infants diagnosed at stage I, while only 63 (6%) and 20(2%) were diagnosed with NEC stages II and III, respectively.

Conclusion: The high use of human milk feeding and KMC were widely implemented with favourable outcomes and predominantly mild NEC (stage I). Further analytical studies are needed to determine their association with neonatal outcomes.

—Evaluating the nutrient adequacy of menus provided to children in ECD centres in JB Marks municipality

Ms Bonolo Mangoenyane¹, Prof Tertia van Zyl¹, Dr Cornelia Conradie¹

¹Centre of Excellence for Nutrition, North-West University, Potchefstroom, South Africa

Introduction: Optimal nutrition during early childhood is critical for growth, cognitive development, and long-term health outcomes. In South Africa, many children rely on meals provided at Early Childhood Development (ECD) centres for a substantial portion of their daily nutrient intake. However, concerns remain regarding whether these menus meet nutritional requirements. This study aimed to assess the nutrient adequacy of menus provided to children in ECD centres in the JB Marks area, North-West Province, South Africa.

Methods: A cross-sectional, observational and descriptive study was conducted in 12 randomly selected ECD centres from a pool of 18 registered centres. Data were collected through direct observation of menu cycles. Energy and nutrient content were analyzed using FoodFinder software. Energy contribution was compared to $\geq 50\%$ of daily requirements, while nutrient adequacy was assessed against the Estimated Average Requirements (EAR) for children aged 2–5 years. Ethical approval was obtained from the Health Research Ethics Committee of the North-West University, Potchefstroom.

Results: Preliminary analysis is expected to show that menus meet or exceed 50% of daily energy requirements, with macronutrient distribution largely within acceptable ranges. However, intakes of key micronutrients, including iron, zinc, calcium and vitamin A, are anticipated to be below EAR recommendations in most centres.

Conclusion: While children may receive adequate or excess amounts of macronutrients, insufficient intake of essential micronutrients could compromise optimal growth and cognitive development. These results underscore the need for targeted nutrition interventions, including menu planning guidelines, food fortification strategies, and cost-sensitive approaches to improve dietary diversity within budget constraints. Strengthening nutrition standards in ECD feeding programs may play a vital role in addressing hidden hunger and improving early childhood health outcomes in resource-limited settings.

—Exploring fingerprinting techniques to survey the quality spontaneously fermented southern African traditional products

Dr Lethiwe Lynett Mbuyane¹, Dr Aubrey Chigwada¹, Prof Memory Tekere¹

¹University of South Africa, Johannesburg, South Africa

Introduction: Fermented foods are integral to African heritage and nutrition but are poorly characterized. The lack of surveillance negatively impacts food sovereignty and poses health concerns and hampers the development of innovative products derived from indigenous knowledge. Objectives: 1) To assess the chemical profile of fermented products (amasi, mahewu and ting-type cereal gruel) using Fourier Transform-Infrared Spectroscopy (FTIR). 2) To assess the microbial profile of fermented products using amplicon sequencing.

Methods: Amasi, mahewu and the ting-type cereal gruel were produced using traditional fermentation processes with minor adjustments in the latter product. For chemical profiling, the sample was placed onto the FTIR spectrometer and the spectra was acquired. For the metagenomic analyses, DNA was extracted and long-read amplicon sequencing of the fungal internal transcribed spacer (ITS) region and bacterial 16S rRNA gene were performed.

Results: FTIR data showed that amasi spectra were dominated by lipid (C–H) and protein (amide I/II) bands, reflecting the dairy matrix. The spectra of cereal based products showed stronger polysaccharide (C–O–C) and organic acid (C=O) contributions, indicative of starch hydrolysis. The presence of strong C=O and O–H bands in all samples further supports the production of acids produced during fermentation. Using metagenomics, substrate-driven microbial assemblies were observed with *Weissella* and *Clostridium sensu stricto* dominating cereal-based fermented products while *Lactococcus* and *Enterococcus* were identified in amasi. Beetle-associated and heat-resistant fungal species were identified in the sorghum-maize ting-variant, reflecting grain storage contamination and diverse assemblages of skin-derived and environmental taxa were identified in amasi posing safety concerns.

Conclusion: Fingerprinting technologies show potential as quality testing and digital archiving tools for traditional foods. FTIR can be used to prepare libraries with biochemical footprints of fermented products for rapid identification of samples and amplicon sequencing libraries can be used as mining tools to identify beneficial/pathogenic microorganisms.

—The impact of honey on the quality of amasi and mahewu during storage

Dr Lethiwe Lynett Mbuyane¹, Ms Ndlovukazi Nkuna¹

¹University of South Africa, Johannesburg, South Africa

Introduction: Amasi and mahewu are nutrient dense traditional foods that are prone to spoilage. Thus, natural preservatives are required to increase shelf life.

Objectives: To assess the impact of honey on the microbiological and physicochemical properties of mahewu and amasi during storage.

Methods: Amasi and mahewu were produced using traditional fermentation processes followed by supplementation with 0% as well as 5% honey and refrigeration for 10 days. Samples were collected on days 0 and 10 to assess the microbial load of the fermented products using malt agar (for yeast quantification), De Man, Rogosa, and Sharpe Agar (for lactic acid bacteria or LAB quantification), and chromogenic agar (for coliform quantification). To assess the physicochemical properties of the products, samples were collected on days 0, 5, 7 and 10 for pH as well as titratable acidity analyses. **Results:** The addition of 5% honey in amasi increased the LAB load, reduced yeast concentration and decreased the coliform population compared to the control. In contrast, a decrease in the LAB concentration, increase in the yeast population and slight decrease in the coliform load was observed for mahewu. The data showed that honey treatment in the products resulted in a statistically significant effect on the microbial counts ($p=0.0058$) over time ($p=0.0056$). Amasi pH with 0% and 5% honey decreased over time whereas that of mahewu increased during storage. The titratable acidity of both products slightly increased during storage in all treatments, albeit higher in amasi. Honey treatments did not significantly impact the pH ($p=0.122$) and titratable acidity ($p = 0.149$) of the fermented products.

Conclusion: Honey shows potential as a natural preservative for amasi based on increases in potentially probiotic LAB and reductions in coliforms, but may not be effective for mahewu based on increases in the yeast population as well pH indicating spoilage risks.

—Perceptions and experiences of practitioners regarding menu implementation in early childhood development care centers in the Polokwane Municipality, Limpopo Province

Mr Kegotshepile Gerald Mokubela¹

¹University of Limpopo, Polokwane, South Africa

Menu implementation in Early Childhood Development Care Centres is essential for promoting optimal child growth, cognitive development, and long-term health. These centres play a critical role in ensuring access to nutritionally adequate meals through planned menus. However, effective menu implementation is often constrained by operational and contextual challenges, particularly in disadvantaged settings. Understanding the perceptions and experiences of practitioners is important for strengthening menu implementation practices and improving child nutrition outcomes. This study aimed to explore the perceptions and experiences of practitioners regarding menu implementation in creches in Polokwane Municipality, Limpopo Province.

A qualitative, exploratory, and descriptive research design was employed. A purposive sampling technique was used to select practitioners from rural, peri-urban, and urban creches. Data were collected through one-on-one, semi-structured interviews, with data saturation reached at 24 participants. Interviews were audio-recorded, transcribed verbatim, and analysed thematically using Tesch's open coding method. Ethical principles were observed, and trustworthiness was ensured through credibility, dependability, confirmability, and transferability.

Practitioners perceived menus as an important operational guide for daily food preparation and a tool for supporting child growth and development. However, menu implementation success varied across settings. Rural and peri-urban centres faced greater challenges, including delayed government funding, inconsistent parental fee payments, infrastructure limitations, and theft of food supplies. To address these challenges, practitioners adopted coping strategies including bulk food purchasing and storage, seasonal menu planning, establishment of vegetable gardens, and support from external stakeholders. These adaptive strategies reflect innovation and demonstrate how practitioners translate nutrition guidelines into practical solutions in resource-constrained environments.

Although menus are highly valued by practitioners, effective and sustainable implementation remains constrained by structural and financial barriers. Strengthening funding mechanisms, improving infrastructure, and enhancing stakeholder collaboration are essential to support successful menu implementation in centers and promote sustainable child nutrition interventions.

—Vitamin B12 status and dietary intake of patients with Type 2 diabetes receiving Metformin in Thulamela Municipality

Dr Selekane Ananias Motadi¹, Mr Tshifhiwa Khorommbi¹, Ms Sedzani Tshidzumba¹, Prof Lindelani Fhumudzani Mushaphi¹

¹University of Venda, Thohoyandou, South Africa

Background: Vitamin B12 deficiency is a recognized complication of long-term metformin use in patients with type 2 diabetes, yet data on its prevalence and dietary determinants in South African populations are limited.

Objective: This study assessed the plasma vitamin B12 status and dietary intake of patients with type 2 diabetes receiving metformin in Thulamela Municipality, South Africa.

Methods: A cross-sectional study was conducted among 339 patients. Socio-demographic data, anthropometric measurements, clinical history, and dietary intake were collected using structured questionnaires and 24-hour dietary recalls. Plasma vitamin B12 concentrations were measured using standard laboratory methods. Descriptive statistics, BMI classification, and Pearson correlation analyses were performed to examine associations between vitamin B12 status, dietary intake, and socio-demographic variables.

Results: Among participants, 32.8% were vitamin B12 deficient, 35.7% had borderline levels, and 31.5% had normal concentrations. The prevalence of overweight and obesity were 46.7% and 26.0%, respectively. Dietary assessment showed high consumption of grains (100%), meat (95.3%), vegetables (87.6%), and fruits (83.5%), but lower intake of milk, eggs, seafood, legumes, and micronutrients such as folate, vitamin C, D, and E. Plasma vitamin B12 was positively associated with BMI, waist circumference, and employment status, and inversely associated with household income, while no significant correlations were observed with dietary diversity or nutrient intake.

Conclusion: Vitamin B12 deficiency is common among metformin-treated patients with type 2 diabetes in Thulamela Municipality. Socio-demographic factors appear to influence vitamin B12 status more than dietary intake, highlighting the need for regular monitoring and potential supplementation in this population. Public health interventions should address both nutritional adequacy and the clinical management of diabetes.

—Consumer investigation of peanuts in South Africa's formal and informal markets

Dr Carmen Muller¹, Dr Beulah Pretorius¹, Prof Hettie C Schönfeldt¹

¹University of Pretoria, Pretoria, South Africa

Introduction: Peanuts are an integral part of South African cuisine, consumed in various forms across different cultural groups. From roasted street snacks to peanut butter and processed foods, peanuts hold economic and nutritional significance. However, SA's peanut market is highly diverse, with a distinct split between formal retail and informal street vending. This study aimed to investigate consumer perceptions, purchasing behaviours, and the role of peanuts within mid- and low-income communities in both sectors.

Methodology: A consumer perception study was conducted, incorporating structured interviews with 214 consumers and qualitative interviews with ten street vendors. The data was statistically analyzed to uncover key trends in peanut consumption, while vendor perspectives provided contextual insights into informal market dynamics.

Results: The study revealed that while peanuts remain a popular snack, consumption patterns are shaped by accessibility, price sensitivity, and cultural preferences. The informal market plays a crucial role in peanut distribution, offering affordable options, often in smaller, unpackaged quantities. Many consumers perceive peanuts as both a nutritious and economical protein source, yet misconceptions about their health benefits persist. Peanut butter was the most widely consumed product, with 88% of respondents eating it regularly, mainly for taste (78%) and perceived health benefits (62%). Price (69%) and taste (66%) were key purchasing factors, with roasted and salted peanuts being the most preferred type (80%). Peanuts were primarily consumed as snacks (70%) and at breakfast (70%). Vendors interviewed provided insight into consumer buying behaviours and perceptions at an informal level.

The findings highlight the strong presence of peanut products in SA. Limited cultural recognition and awareness of peanuts as a cultural food present opportunities for targeted interventions to enhance consumption, particularly within informal markets. While the study focuses on SA, its implications extend to other middle- and low-income countries where informal markets impact food consumption trends.

—Exploring the utility of calf circumference as an anthropometric indicator of nutrition status in pregnancy

Dr Sanja Nel¹, Prof Ute Feucht^{1,2,3}, Prof Friede Wenhold¹

¹University of Pretoria Research Centre for Maternal, Fetal, Newborn and Child Health Care Strategies, Pretoria, South Africa, ²University Of Pretoria Department of Paediatrics, Pretoria, South Africa, ³Tshwane District Clinical Specialist Team, Tshwane, South Africa

Introduction: Calf circumference is an emergent anthropometric indicator of skeletal muscle wasting in adults, but has not been investigated in pregnancy.

Methods: As part of a longitudinal cohort study, third-trimester pregnant women (N=104) were conveniently recruited from three health facilities in Tshwane District, Gauteng. Weight, height, mid-upper arm circumference (MUAC) and calf circumference (CC) were measured, and weight at antenatal clinic booking recorded. Body mass index (BMI) was calculated using booking and recruitment weights; CC was adjusted using both BMI values (BMI<18.5 kg/m²: +4 cm; BMI=25.0-29.9 kg/m²: 3 cm; BMI=30.0-39.9 kg/m²: -7cm; BMI ≥40.0 kg/m²: -11cm) and the results compared. Adjusted CC (AdjCC) was classified as normal (AdjCC≥33cm), low (31cm≤AdjCC<33cm) or very low (AdjCC<31cm). Associations between CC and other anthropometric parameters were investigated.

Results: At recruitment (gestational age (GA) 31.5±2.2 weeks), mean MUAC was 31.3±4.0cm and mean CC 37.9±4.1cm. Weight gain was 0.28±0.29 kg/week from booking to recruitment (interval: 17.3±5.5 weeks), including 17 women (16.3%) with weight loss or no weight gain. Mean BMI increased from 28.8±5.6 kg/m² at booking (GA 15.0±5.3 weeks) to 30.5±5.6 kg/m² at recruitment; with 43 women (41.3%) moving to a higher BMI class accompanied by greater downward CC adjustment. Mean AdjCC was 34.1±3.0 kg/m² using booking BMI and 33.1±2.8 kg/m² using recruitment BMI; similarly, more women were classified as having low and very low AdjCC using recruitment BMI (30 (29.1%) low, 17 (16.5%) very low) than booking BMI (22 (21.4%) low, 10 (9.7%) very low). Unadjusted CC was significantly correlated (p<0.05) with booking BMI (r=0.765), recruitment BMI (r=0.775) and MUAC (r=0.732), but no strong correlations were found between AdjCC variables and other anthropometric parameters.

Conclusion: CC as indicator of skeletal muscle status in pregnancy requires further methodological refinement to clarify appropriate adjustments and cut-off values. Validation against body composition measures and pregnancy outcomes is recommended.

—Food safety hazards and health outcomes in Tshwane South District: A learner-centred assessment of the NSNP environment

Prof Cebisa Noxolo Nesamvuni^{1,2}, Dr Tjale Cloupas Mahopo^{1,2}, **Mrs Mavis Ranwedzi**³

¹University of Venda, Thohoyandou, South Africa, ²Institute for pathogen and global health, University of Venda, Thohoyandou, South Africa, ³National Department of Basic Education, Tshwane, South Africa

Background: Food safety is a global public health and economic concern. Foodborne illness outbreaks are a growing crisis in South Africa, affecting the National School Nutrition Programme (NSNP). Learners' experiences and perceptions of food safety are crucial for ensuring the safe implementation of school-based nutrition programmes. This study aimed to determine learners' experiences and perceptions of the NSNP in Tshwane South District, Gauteng Province, South Africa.

Methods: Survey data were collected from 48 schools participating in the NSNP. The questionnaire had four key domains: (1) School food environment (NSNP meals vs external sources; NSNP acceptability, preferences and satisfaction), (2) hygiene infrastructure and practices (access to running, warm water and hand washing), (3) Food safety perception, and (4) health outcomes (incidence and type of gastrointestinal symptoms). Systematic random sampling selected 239 learners from Grades 7, 10, 11, and 12. Descriptive and inferential statistics were used. Frequencies and percentages summarised categorical variables, including demographics, food exposure, hygiene practices, environmental conditions, learner perceptions, and self-reported illness. Associations between illness and risk factors were assessed using the Chi-square test, with the Fisher-Freeman-Halton Exact test applied when assumptions were not met. Statistical significance was set at $p < 0.05$, and findings were interpreted as associations due to the cross-sectional design.

Results: Most learners consumed both school meals and external foods, potentially increasing exposure to food-related risks. Over 60% were satisfied with NSNP meal quality and quantity; 19.7% reported illness after NSNP meals, and 10.0% after external foods. Fish was the most frequently implicated NSNP item, while packaged snacks were the main external source. Rash and stomachache were the most common symptoms. The Fisher-Freeman-Halton Exact test showed a significant association between perceived meal safety and illness ($p < 0.001$), with learners perceiving meals as unsafe or only sometimes safe reporting higher illness prevalence (45.0% and 50.0%, respectively) than those who considered meals safe (14.4%).

Conclusion: The survey suggests that inadequate infrastructure and basic amenities may increase the risk of cross-contamination, potentially contributing to foodborne illnesses among learners in the NSNP.

—Nutritional quality and caregiver acceptability of a peanut- and milk-free plant-based ready-to-use therapeutic food

Prof Cebisa Noxolo Nesamvuni¹, Dr Oluwaseun Funmi Akinmoladun^{2,3}, Prof Victoria Adaora Jideani⁴

¹University of Venda, Thohoyandou, South Africa, ²University of Medical Sciences, Ondo, Nigeria, ³University of the People, Pasadena, USA, ⁴Cape Peninsula University of Technology, Cape Town, South Africa

Background: Ready-to-use therapeutic foods (RUTFs) are essential for treating severe acute malnutrition (SAM) in children. Conventional RUTF formulations rely heavily on peanut paste and skimmed milk powder, which increase costs, pose allergen concerns, and limit local production in many low-income countries. This study aimed to develop and evaluate a peanut- and milk-free plant-based RUTF formulated from soybean, Bambara groundnut, and sorghum, with *Moringa oleifera* leaf powder incorporated as a micronutrient source. Nutritional composition, protein quality, colour attributes, and caregiver acceptability were assessed.

Methods: Ingredient proportions were optimised using linear programming to meet international RUTF nutritional specifications (520-550 kcal/100g). Eighteen candidate formulations were generated, from which five were selected following laboratory validation (<10% deviation from predicted values). Proximate composition was determined using standard analytical methods. Protein quality was assessed through in vitro protein digestibility and protein digestibility-corrected amino acid score (PDCAAS). Colour parameters were measured instrumentally. Sensory acceptability was evaluated by 25 caregivers using a 9-point hedonic scale.

Results: Selected formulations met the recommended macronutrient requirements. Energy values and protein content ranged from 539 to 564 kcal/100 g and from 13.7% to 17.7%, respectively. In vitro protein digestibility ranged from 71% to 82%, and PDCAAS values ranged from 60% to 65.8%, meeting recommended thresholds for therapeutic foods for children aged 24-59 months. Sensory evaluation indicated significant differences among formulations ($p < 0.05$). The formulation containing both *M. oleifera* and a vitamin-mineral premix achieved the highest overall acceptability. Increasing the inclusion of *M. oleifera* resulted in a darker colour.

Conclusion: Plant-based RUTFs formulated from soybean, Bambara groundnut, and sorghum can meet international nutritional standards while achieving acceptable protein quality and caregiver approval.

—Biochemical and microbial quality of instant maize porridge fortified with Moringa oleifera leaves and termite powders

Prof Cebisa Noxolo Nesamvuni¹, Dr Khavhatondwi Rinah Mofokeng¹, Prof Lindelani Fhumudzani Mushaphi¹

¹Department of Nutrition, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa

Background: Maize porridge is a dietary staple across Southern Africa but is nutritionally limited for addressing childhood micronutrient deficiencies. The study aimed to evaluate the effect of fortifying instant maize porridge with Moringa oleifera leaf powder and edible termite powder on biochemical composition and microbial safety.

Methods: A completely randomised design was applied to compare unfortified porridge (100% maize) with fortified porridge (80% maize, 5% cooked Moringa oleifera leaf powder, and 15% termite powder). Mineral composition was quantified using polarised Zeeman atomic absorption spectrophotometry (Hitachi ZA3000), while vitamin A and folate were determined using AOAC (2010) standard methods. Microbial safety was assessed using PCR-based techniques. Data from two independent experimental replicates were analysed using SPSS (v25) with statistical significance set at $p < 0.05$.

Results: Fortification significantly increased vitamin A (107 to 139 $\mu\text{g}/100\text{ g}$) and folate (173 to 226 $\mu\text{g}/100\text{ g}$) concentrations compared with the control ($p < 0.05$). Iodine and potassium levels were also significantly elevated in fortified samples. Total microbial counts in fortified porridge were $< 10\text{ CFU/g}$, remaining well within acceptable food safety thresholds recommended by South African regulatory standards, indicating no compromise to microbial safety.

Conclusion: Fortification of instant maize porridge with Moringa oleifera leaf and termite powders significantly improves micronutrient density while maintaining microbiological safety. The findings support the use of locally available indigenous food resources as sustainable strategies to improve the nutritional quality of complementary foods in food-insecure settings.

—The association between maternal complementary feeding KAP and infant anthropometric status in Kawangware, Nairobi County

Ms Eunice Njoroge^{1,2}, Ms Daisy Chelangat¹, Prof Amina Abubakar¹, Mrs Ronel Beukes²

¹Aga Khan University, Nairobi, Kenya, ²Stellenbosch University, Cape Town, South Africa

Background: Good nutrition in infancy supports optimal growth, development and immunity. Breastfeeding and complementary feeding are the core of early nutrition. In Kenya, however, only 31% of children aged 6–23 months meet the minimum acceptable diet and 37% achieve minimum dietary diversity. This study investigated the association between maternal complementary feeding knowledge, attitudes and practices (KAP) and anthropometric status among infants aged 7–12 months in Kawangware, Nairobi County.

Methods: A quantitative cross-sectional study that involved 100 mother–child dyads. Maternal KAP on complementary feeding was assessed using the Food and Agriculture Organisation (FAO) Feeding Young Children (6–23 months) KAP questionnaire. Infants' weight and length were measured and computed to obtain z-scores: weight-for-length (WLZ), length-for-age (LAZ), and weight-for-age (WAZ). Multiple logistic regression models were fitted to examine predictors of anthropometric status.

Results: Mothers demonstrated strong knowledge of breastfeeding duration and the timing of complementary feeding. However, notable gaps remained in knowledge of appropriate food consistency, achieving minimum dietary diversity, and anaemia prevention. Attitudes towards complementary feeding were generally positive. While 95% practiced continued breastfeeding and 62% introduced complementary foods on time, only 51% of the children met the recommended dietary diversity. Notably 11% of children were stunted while 10% were underweight. Higher maternal KAP scores (OR = 0.64, $p = 0.032$) and older maternal age (OR = 0.78, $p = 0.022$) were significantly associated with reduced odds of underweight and stunting respectively.

Conclusion: In this population, maternal KAP predicts infant feeding practices and anthropometric status in infancy, highlighting the need for targeted nutrition education and addressing structural barriers to improve dietary diversity and child nutrition outcomes.

—Ultrasound-assisted soaking effects on Phytonutrient Content, Antioxidant Properties, and Antinutrients (Trypsin Inhibitors) in Finger Millet *Eleusine coracana* (L.) Gaertn.) seeds

Ms Imani Ravhudzulo¹, Dr James Elegbeleye¹, Dr Semakaleng Mpai¹, Mr Tshanduko Rtahumbu¹, Prof Dharini Sivakumar^{1,2}

¹Tshwane University Of Technology, Pretoria-Wes, South Africa, ²The University of Queensland, Brisbane, Australia

Finger millet (*Eleusine coracana* (L.) Gaertn) is a drought tolerant grain of high dietary importance, valued for its exceptional nutritional profile, resilience, and adaptability. Despite these attributes, finger millet (FM) still contains certain antinutritional factors, which is most notably trypsin inhibitors, which limit its wider utilisation. The present study investigated the effects of two processing approaches: conventional (CS) and ultrasound-assisted soaking (UAS) on phytonutritional and antinutritional properties of finger millet varieties (red (RFM), brown (BFM), and gold (GFM)). The micronized samples from the three varieties were subjected to CS and UAS for different periods (0, 6, 12, 18, and 24 h) following a completely randomized design. The flour was analysed for soluble protein, Total phenol (TPC), ferric reducing antioxidant power (FRAP), and trypsin inhibition. Statistically significant differences ($p < 0.05$) were observed between the CS and UAS treatments across all soaking durations for all millet varieties based on repeated measures and Dunnett multiple comparisons analyses. The UAS soaking consistently enhanced the total phenols and ferric antioxidant reducing power regardless of the millet variety and soaking duration. The highest total phenols (88.76 mg/g GAE) were detected in GFM at 24 h. The FRAP increased with soaking time and method with the RFM (47.05 TEAC mM/g), followed by GFM (42.85 TEAC mM/g), showing the most significant (< 0.05) change due to enzymatic activity under UAS at 24 h. Soluble protein showed the highest significance ($p < 0.05$) decrease in GFM (4.92 mg/g) and BFM (4.88 mg/g) at 24 h. After 24 h, the trypsin inhibitor decreased substantially under UAS for RFM (33.33 TIU/g) compared to others. Results attributed that products UAS enhance the nutritional profile and antioxidant properties of FM flours while reducing the antinutritional content, thus potentially improving nutrient availability.

—Food consumption and dietary diversity of adults living in Gauteng, KwaZulu-Natal, and Eastern and Western Cape provinces of South Africa

Prof Hettie Schönfeldt¹, Dr Beulah Pretorius¹

¹University of Pretoria, Pretoria, South Africa

Introduction: South Africa is experiencing a persistent double burden of malnutrition, characterised by the coexistence of undernutrition and obesity. While research has largely focused on children, adult dietary patterns play a critical role in shaping household food security and long-term health outcomes. This study aimed to assess food consumption and dietary diversity among adults nationally and in four provinces, namely, Eastern Cape, Gauteng, KwaZulu-Natal, and Western Cape, using two complementary dietary assessment approaches.

Methodology: Method A synthesised quantitative dietary intake data from peer-reviewed literature and unpublished datasets (post-2000), while Method B analysed household food expenditure patterns and food supply data, including production and import balances. The comparison highlights both similarities and differences in estimating dietary intake.

Results: Across provinces, both methods consistently identified diets dominated by starch-rich staples, particularly maize and bread, with chicken as the most consumed and purchased animal-source food. Low fruit, vegetable, and dairy intake emerged as a persistent concern. Method A provided detailed insights into individual dietary intake and diversity, revealing significant socio-economic and urban–rural disparities, with lower diversity and nutrient adequacy among vulnerable populations. In contrast, Method B captured broader economic drivers of food choice, demonstrating how affordability influences dietary quality, particularly among lower-income households, who allocate a larger share of their expenditure to staple foods.

However, discrepancies were evident. While expenditure data suggested relatively diverse household food baskets, intake data indicated that individual dietary adequacy remains limited. This reflects the limitations of indicators such as household dietary diversity scores in capturing true nutrient intake.

Conclusion: Integrating both methods offers a more comprehensive understanding of dietary patterns, highlighting the need for improved, individual-level dietary data to inform targeted nutrition interventions and policies aimed at enhancing dietary quality and equity in South Africa.

—Optimal consumption of traditional green leafy vegetables among young children aged 2–6 years in South Africa: a scoping review

Mr Nkululeko Milton Semenekane¹

¹University of Pretoria, , South Africa

Background: One major global public health concern is the incidence of micronutrient deficiencies in young children, which significantly impacts populations in Low and Middle-Income Countries (LMICs). Traditional Green Leafy Vegetables (TGLVs) are an essential component of regular diets in many cultures around the world. It has been part of the food system for decades and its consumption has been associated with numerous health benefits and bioactive compounds.

Objective: To map the available evidence on the consumption, nutritional benefits, cultural significance, or potential challenges towards the consumption of traditional green leafy vegetables in the diets of young children aged 2–6 years.

Methods: A comprehensive search strategy was used to identify relevant literature tailored to PubMed/MEDLINE, Scopus, Web of Science, CAB Abstracts and other sources. The selection criteria were based on the Arksey and O'Malley framework and guided by PRISMA with extension for Scoping Reviews (PRISMA-ScR). The search was mainly focused in South Africa (296 articles). After removing 139 duplicates, a total of 157 research articles were screened. In the data extraction phase, 36 articles were selected.

Results: The review revealed that TGLV consumption among young children in South Africa varies considerably by region, socioeconomic status with urban versus rural settings. Sample sizes ranged from 30 to 1530 participants which includes young children, caregivers and household heads.

Conclusion: The review findings provide a foundation for developing contextually appropriate, evidence-informed recommendations to optimise TGLV consumption among young South African children, which may provide a long-term solution to ongoing nutritional challenges while preserving cultural food identities.

—Folic acid in South Africa's antenatal care: Too much, too late?

Dr Marita Serfontein¹, Dr Elize Symington¹

¹University of South Africa (UNISA), Pretoria, South Africa

South Africa's dual strategy on mandatory folic acid fortification and routine antenatal iron and folic acid (IFA) supplementation has been in place for two decades to address neural tube defects (NTDs), maternal anaemia, and broader micronutrient deficiencies. This narrative review examined national evidence on the implementation and outcomes of these interventions, including biomarker studies, programme evaluations, and data on coverage, compliance, and surveillance. While fortification has improved folate status and contributed to reduced NTD prevalence, significant challenges persist. Anaemia rates among pregnant women and women of reproductive age remain high. The folic acid dose in the antenatal IFA supplement is more than ten times the global recommendations. High-dose folic acid exposure raises concerns about unmetabolized folic acid, though this remains unmeasured in South Africa. The exclusion of vitamin B12 from both the fortification premix and antenatal regimen is concerning. Monitoring and quality assurance systems are inconsistent, particularly among small and medium-scale food producers. These findings highlight the need to revise micronutrient strategies to align with updated World Health Organization guidelines and consider the inclusion of a multiple-micronutrient supplement. Addressing these gaps is critical to improving maternal nutrition, safeguarding public health, and ensuring long-term programme sustainability.

—Reformulating chocolate biscuits with finger millet to improve nutritional composition and consumer acceptability

Ms Julia Stewart¹, Dr Laurencia Govender¹, Prof Muthulisi Siwela², Dr Karina Palmer³

¹Discipline of Dietetics and Human Nutrition, School of Health Sciences, University of KwaZulu-Natal, Pietermaritzburg, South Africa, ²Discipline of Agricultural Management, School Agriculture and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa, ³Consumer Sciences Department, Faculty of Science, Agriculture and Engineering, University of Zululand, Durban, South Africa

Introduction: The dual burden of over- and undernutrition continues to increase in South Africa. Current strategies have had limited success; however, food-based approaches utilising nutrient-dense traditional and indigenous crops may complement existing interventions. Finger millet (FM) is a nutrient-rich indigenous grain with potential for product reformulation. This study evaluated the physical quality, nutritional composition, and consumer acceptability of chocolate biscuits partially substituted with FM.

Methods: A cross-sectional experimental design was employed. Two FM varieties (high-tannin and tannin-free) were incorporated at 0% (control), 30%, 50%, and 70% substitution levels (FM flour: wheat flour, w/w). Physical properties, proximate and mineral composition and consumer acceptability were assessed using standard methods. A total of seven biscuit formulations were evaluated for taste, colour, texture, aroma, crispiness, and overall acceptability using a 9-point hedonic scale (1 = dislike extremely; 9 = like extremely). Data were coded, entered into excel spreadsheet, and analysed using SPSS, version 25. Nutritional composition and consumer acceptability data were analysed using ANOVA followed by Tukey's post hoc test. Means and standard deviations were calculated, and $p < 0.05$ was considered statistically significant. Ethical approval was obtained from the University of KwaZulu-Natal ethics committee.

Results: Increasing FM substitution level reduced biscuit spread and produced darker products compared with the control. FM-substituted biscuits contained significantly higher fat, fibre, and mineral content than the control. However, firmness, crispness, and overall acceptability decreased slightly as FM concentration increased. Biscuits containing 30% of either FM variety was acceptable to the consumer panel and had improved nutritional value relative to the control.

Conclusion: Partial substitution of wheat flour with FM improves the nutritional profile of chocolate biscuits while maintaining consumer acceptability at 30% substitution. This approach supports the development of nutrient-dense snack products aligned with food-based strategies to address the dual burden of malnutrition in South Africa.

—Metabolites and nutrient composition of indigenous okra (*Abelmoschus Esculentus*) pods and leaves

Ms Sedzani Tshidzumba¹, Ms Netshedzo Madondo¹, Ms Tebogo Mapatha¹, Ms Prayers Sambo¹, Ms Rendani Mulaudzi¹, Ms Thinavhuyo Magala¹, Mr Kgabo Maremane¹, Dr Hlekani Mbhatsani¹, Dr Anza-Tshilidzi Ramabulana²
¹University of Venda, Thohoyandou, South Africa, ²Agricultural Research Council, Pretoria, South Africa

Background: Okra (*Abelmoschus esculentus*) is a nutrient-rich vegetable widely consumed for its health benefits, including its high antioxidant and bioactive compound content. However, preservation methods can significantly affect its nutritional and metabolite profile.

Aim: The study aimed to investigate the effects of various preservation methods on the nutrient and metabolite contents of *A. esculentus*.

Methods: The study was a true experimental design, and okra samples were collected from Nweli village in the Vhembe district. The proximate analysis included moisture, protein, fibre, ash, fat, and carbohydrates. Liquid chromatography-mass spectrometry (LC-MS) was used to determine metabolite profiling, and molecular networking was applied to determine compound annotation. Principal Component Analysis (PCA) was performed to explore intrinsic patterns in the data.

Results: The study revealed significant variations in nutrient and metabolite profiles among the three drying methods. Freeze drying preserved the highest levels of bioactive compounds, such as phenolic compounds and flavonoids, compared to sun drying and shade drying. Shade drying retained more fat and fiber, while sun drying resulted in lower nutrient retention but higher concentrations of specific metabolites. The molecular networking analysis identified key bioactive compounds, including quercetin derivatives, cyanidin-3-O-sambubioside, and turanose, which was the most abundant in freeze-dried and shade-dried samples. Proximate analysis showed the highest fiber content in shade-dried pods and moisture retention in freeze-dried samples.

Conclusion: Preservation methods significantly influenced the nutritional and metabolite composition of okra. Freeze drying was the most effective method for retaining bioactive compounds, while shade drying maintained higher fat and fiber content. These findings provide insights into optimizing preservation techniques for maintaining okra's nutritional and therapeutic value.

—Adherence to hospital discharge criteria and relapse rates in children with severe acute malnutrition

Prof Evette Van Niekerk¹, Mrs Georgia Burnett

¹Stellenbosch University, Cape Town, South Africa

Objective: Despite global initiatives, severe acute malnutrition (SAM) remains a significant threat to children under five. The World Health Organization protocol for SAM management suggests ten specific discharge criteria. Post-discharge SAM relapse remains poorly defined and understudied. Therefore, standardised definitions of relapse are needed, as well as evidence-based research on long-term SAM recovery after discharge. This study's primary objective was to determine whether a relationship exists between adherence to hospital discharge criteria and rates of SAM relapse six months after discharge. The study further aimed to determine whether certain discharge criteria points have greater impact on SAM relapse than others.

Design: A retrospective descriptive study with analytical components.

Setting: Wesfleur Hospital Paediatric Ward, Cape Town, Western Cape South Africa.

Participants: The final study population comprised 26 paediatric patients under five years of age, admitted with a diagnosis of SAM between 1 August 2022 and 31 July 2023.

Results: A statistical comparison test revealed a significant relationship between adherence to discharge criteria and SAM relapse rates. Non-adherent participants, classified with a score below 80%, experienced 243 SAM relapses per 1 000 person-months follow-up, whereas the adherent group with a score of 80% or above had no relapses within 1 000 person-months.

Conclusion: A relationship exists between adherence to hospital discharge criteria and post-discharge outcomes in paediatric patients diagnosed with SAM. Non-adherence to discharge criteria significantly increases rates of SAM relapse, particularly for four key criteria: return of appetite, adequate weight gain, resolution of social issues, and nutritional counselling for the caregiver.

—Evaluating the consumer's use and application of microgreens in Newcastle, KwaZulu-Natal, South Africa

Dr Annette Van Onselen¹, Mrs Dachele Pryce¹, Prof Elizabeth Kempen¹

¹UNISA, Roodepoort, South Africa

Objectives: The aim of this study was to evaluate consumer use and application of microgreens as a potential strategy to address malnutrition in Newcastle, KwaZulu-Natal. Microgreens are premature consumable seedlings, which boast nutrient-dense and functional qualities that are cultivated in a short timeframe. Understanding the use and application of microgreens and mindful eating may facilitate the exploration of health-focused meal incorporation to potentially relieve the increased prevalence of health-related diseases.

Methods: A non-probability convenience sampling method was used to recruit 60 respondents from local shops, during which the research aim, and ethical clearance was explained, inclusion criteria applied, and eligible participants invited to complete the structured online survey.

Results: Thirty four percent (34%) of the respondents had eaten microgreens before, from which only 5% indicated daily. None of the participants could identify amaranth as a microgreen variant. More than 60% of the participants felt that microgreens were a healthy addition to the diet.

Conclusions: Gaps in the respondent's knowledge in microgreens, could result in the inadequate use of microgreens. The potential nutritional effectiveness of microgreens in addressing nutrition needs may be influenced by a lack of consumer knowledge and not necessarily the inadequacy of microgreen qualities. This research could be utilised by public health practitioners, nutritionists and policy makers to generate evidence-based nutrition intervention.

— POSTER PRESENTATIONS

INFORMATION | EDUCATION

— Health benefits of incorporating indigenous foods into an urbanized diet

Ms Jandri Barnard¹, Dr Annette Van Onselen², Prof Unathi Kolanisi³

¹University of KwaZulu-Natal, Pietermaritzburg, South Africa, ²University of South Africa, Johannesburg, South Africa,

³University of Zululand, Richards Bay, South Africa

Background: Within South Africa the Zulu population are the largest ethnic group (77.8%) with an estimated 10–12 million people living predominantly in the KwaZulu-Natal (KZN) province, being influenced by urbanization when seeking better work opportunities away from their rural upbringing. This societal change influences their dietary and nutrition intake, with an indication of an increased non-communicable disease (NCD) profile of this population.

Indigenous foods health benefits: In rural population indigenous foods are consumed as part of traditional diets in family setting, from home-produced vegetable gardens through subsistence farming resulting in nutrient dense diets with a lower prevalence of NCDs. While urbanized diets include more ultra-processed foods (UPF), higher in sugar, saturated fats and processed meats. Most of these population groups receive one meal a day at their workplace canteen, where some include indigenous foods as part of the ingredients.

Indigenous foods consumed by Zulus includes: ujeqe (steamed bread), samp and beans, phutu porridge (classified within the starch food group), amasi (fermented cow's milk), amadumbe (root crop similar to sweet potato) and imifino (wild edible greens including morogo or spinach leaves).

Study Background: This study aimed to determine by self-reported food intake questionnaires the dietary intake patterns and diversity among adults residing within KZN. The intake of indigenous foods in rural KZN was determined by homestead questionnaires and the indigenous foods investigated served at workplace canteens.

Promotion of indigenous foods: The health benefits of indigenous foods need to be promoted as a nutritious, high fibre food source that can be eaten within different societies and not only the Zulu population. Indigenous foods such as maize meal, imifino, sorghum, samp and bambura beans can form part of the ingredients of everyday foods and even paired with drinks to enhance its taste palette, to be enjoyed by rural and urban populations.

—Nutrition education in the South African school curriculum: A review of the literature

Mrs Marlise Bester¹, Dr Elize Symington¹, Dr Bianca van der Westhuizen¹

¹UNISA, Midrand, South Africa

Nutrition education in schools is widely recognised as a key strategy for improving dietary behaviours and addressing the growing burden of diet-related disease among children and adolescents. In South Africa, where undernutrition and obesity coexist, the need for effective school-based nutrition education is particularly pressing. Yet limited systematic attention has been given to how nutrition education is currently positioned within the national school curriculum framework.

This research presents a review of the existing literature on nutrition education within the South African school curriculum. Drawing on peer-reviewed studies, curriculum policy documents, and government programme evaluations, the review examines how nutrition education is integrated within the Curriculum and Assessment Policy Statement (CAPS), the subjects through which it is delivered, the curriculum time allocated to it, and the pedagogical approaches reported in the literature. The role of the National School Nutrition Programme (NSNP) as a complementary mechanism for nutrition education is also considered.

The review reveals a consistent pattern of fragmented, time-limited nutrition content embedded primarily within Life Skills and Life Orientation subjects, with recurring concerns about educator preparedness, lack of curriculum coherence across phases, and the absence of a dedicated nutrition education framework. Studies further highlight a disconnect between policy intent and classroom practice.

The review concludes by identifying gaps in the current literature and proposing areas for further investigation, thereby laying a conceptual foundation for future primary research on the development of a more structured approach to nutrition education in South African schools.

—The role of the dietitian in the implementation of a NTP Policy at PHC settings in Cape Metropole District, SA

Ms Vuyani Lisbeth Hobyani¹

¹Department of Health Government, Umthatha, South Africa

The Protein Energy Malnutrition Scheme was initiated in 1971 to address insufficient dietary intake as an immediate cause of malnutrition in South Africa (SA). Since then, despite the implementation of national, provincial, and district-level strategies to combat and prevent malnutrition, it remains a public health concern. Aiming to address the short-term management of malnutrition, the Nutrition Therapeutic Program (NTP) is one in a package of programs implemented at the facility level. While RDs are experts in nutrition, their role and function in implementing the NTP have not been clearly established to date. This study followed a descriptive cross-sectional design to describe the role of RDs in the implementation of the NTP policy in the Cape Metropole District of the Western Cape Province.

Twenty-one RDs involved in implementing the NTP participated in an online survey. Participants indicated their role as conceptualising (n=12;60%), planning (n=16;80%), implementing (n=17;85%), documenting (n=14;70%), monitoring (n=19;95%) and evaluating (n=13;65%) intervention strategies to address nutrition and related health concerns and diseases. At facility level, 71% of participants (n=15) indicated that they were responsible for the availability of NTP stock, However, 81%(n=17%) also reported they had to overcome intermittent stock shortages, 28.6%(n=6) observed the incorrect application of the eligibility criteria and 52.4%(n=11) experienced that beneficiaries interrupted their treatment.

The findings of this study demonstrate that RDs' role in the implementation of the NTP policy directly aligns with the acts pertaining to the scope of the profession of dietitians in SA. The barriers they face in implementing the policy may however compromise their ability to effectively deliver nutrition-related interventions. To eradicate malnutrition, nutrition expertise should be maximized. It is therefore recommended to develop standard operating procedures regarding the role of RDs in the implementation of the NTP policy at facility-, district-, provincial- and national levels.

—Nutrition labelling on a selection of ultra-processed foods in South Africa

Ms Richelle Cavanagh¹, Dr Nelene Koen¹

¹Division of Human Nutrition, Department of Global Health, Stellenbosch University, Cape Town, South Africa

Introduction: Food labelling, including health and nutrition claims, influences consumer purchases and is often displayed on ultra-processed food packaging. Warning labels and nutrient profiling have been implemented in several countries, and South Africa has recently proposed their use in new draft labelling legislation (R.3337). This study investigated the nutrition information on selected ultra-processed food products in South Africa and assessed how many products would require warning labels according to R.3337.

Methods: A cross-sectional descriptive study was conducted. A census of selected ultra-processed food categories—breakfast cereals, packaged bread and buns, margarines, and other spreads—classified according to the NOVA system was carried out at the largest branches of five major South African retailers in the eThekweni Municipality, KwaZulu-Natal from January - March 2023. Information from the front, back, and side panels of products was captured using a smartphone.

Results: A total of 927 products were screened, of which 641 met the inclusion criteria. Most cereals (97.4%), breads (73%), and spreads (85.7%) displayed nutrition claims, while health claims appeared on 48.5% of cereals, 16.3% of breads, and 7.4% of spreads. Health endorsement logos were present on 6.7% of products. Overall, 80.2% required a warning label, and only 19.7% were eligible to make claims. With the implementation of R.3337, 80.3% of products will require label amendments or reformulation.

Conclusion: A notable number of ultra-processed cereals, breads, and spreads available to South African consumers display health-promoting information, creating a potentially deceptive purchasing environment. With the implementation of the draft labelling regulations (R.3337), most products in these categories will require warning labels and will not be permitted to make health or nutrition claims, which may encourage manufacturers to amend labels or reformulate products to support healthier dietary intake among South Africans.

—Breastfeeding as a foundation for infant food security: Strengthening first food systems and addressing food inequalities

Dr Prudence Bongekile Mabaso¹, Dr Catherine Pereira-Kotze¹, Prof Tanya Doherty¹, Prof Lisanne Du Plessis¹

¹University of KwaZulu-Natal, Scottsville, Pietermaritzburg, South Africa

Introduction: Infants represent a systematically overlooked population in global food security discourse. Despite global acknowledgement that the protection, promotion, and support of breastfeeding is essential to infant survival and wellbeing, breastfeeding remains absent from mainstream food security frameworks and strategies. This paper argues that reframing breastfeeding within infant food security and first food systems offers a powerful lens for addressing food inequity from the earliest moments of life.

Methods: We conducted an evidence synthesis drawing on current global guidance, policy frameworks, and empirical literature on breastfeeding, infant food security, and first food systems. Conceptual frameworks were mapped and case study examples from diverse geographic and socioeconomic contexts were analysed to illustrate structural enablers and barriers to optimal infant and young child feeding.

Results: Breastfeeding functions as both a nutritional and economic buffer against food insecurity shocks, yet global breastfeeding rates remain inequitably distributed along socioeconomic and geographic lines. Analysis of first food systems reveals that commercial milk formula marketing actively undermines breastfeeding in contexts with the least capacity to absorb its consequences. Structural barriers — including inadequate maternity protection, absent enabling environments, and weak legislative enforcement of international marketing codes — disproportionately affect the most vulnerable infants. Enabling environments that integrate breastfeeding into food security policy demonstrate measurable gains in infant feeding outcomes.

Conclusion: First food systems are under increasing commercial pressure, and the consequences fall hardest on the most food-insecure infants and families. In an increasingly unstable world, governments must urgently integrate breastfeeding protection, promotion, and support into food security policy frameworks as a non-negotiable strategy for reducing food inequalities from the start of life.

—Growth monitoring and promotion programme: Mothers experience and perceived barriers in Vhembe District, South Africa

Dr Tshifhiwa Cynthia Mandiwana¹, Ms Sussana Maria Kassier²

¹University of Venda, Faculty of Health Sciences, Department of Nutrition, Pretoria, South Africa, ²University of KwaZulu-Natal, Discipline of Dietetics and Human Nutrition, , South Africa

Growth Monitoring and Promotion Programme: Mothers Experience and Perceived Barriers in Vhembe District, South Africa

In developing countries, Growth Monitoring and Promotion (GMP) has been reported as an ineffective intervention for reducing undernutrition due to the elimination of mothers from the process. The purpose of the study was to determine maternal knowledge of, and perceived barriers to attending government clinics for GMP of their Infants and Young Children (IYC) younger than five years in the Vhembe district. A qualitative exploratory design, using Focus Group Discussions (FGDs) with mothers at clinics representing the four sub-districts in Vhembe district, was conducted. Of the 16 randomly sampled clinics (four per district), data saturation was reached after conducting nine FGDs with a total of 83 purposively sampled mothers with the mean age of 29 ± 6.53 years per focus group. While most mothers understand the importance of growth monitoring (GM) for their IYC, some are unfamiliar with the details and significance of the GMP services. Barriers to successful implementation include poor adherence to follow-up schedules, nurses' workload, limited government resources, and lack of immunizations. Mothers of IYC in the Vhembe district recognize the importance of the GMP program. However, various factors prevent them from fully utilizing clinic services. These findings highlight the need for nursing staff, clinics, and the Department of Health to address these barriers, as doing so could improve the effectiveness of the GMP program in the district.

—Bridging the gap: Health professionals' knowledge of dietary guidelines (SAFBDG) and food fortification in Limpopo, South Africa

Miss Faith Masala¹

¹National Department of Health, Pretoria, South Africa

Introduction: South Africa has key nutrition policy instruments, including the South African Food-Based Dietary Guidelines (SAFBDGs) and Regulation R.504 of 2003 on food fortification, which aim to improve dietary quality and reduce micronutrient deficiencies. The SAFBDGs promote healthy eating practices, while R.504 mandates the fortification of maize meal and wheat flour with essential micronutrients such as vitamin A, iron, and zinc.

Objective: To assess health professionals' knowledge of the SAFBDGs and the national food fortification, and to identify gaps requiring strengthened nutrition education.

Methods: A cross-sectional study evaluated 336 consenting health professionals (62 males, 274 females) across 25 public health facilities in Limpopo. Data were collected using a structured, self-administered questionnaire. Descriptive statistics were used to analyse the data. Knowledge scores were categorised as poor (0–29.9%), fair (30–49.9%), good (50–69.9%), very good (70–89.9%), and excellent (90–100%).

Results: Overall, nutrition knowledge among health professionals was disappointing, with 83% scoring fair or poor, and none reaching an excellent level of knowledge (4.8% - very good, 12.2% - good, 64.6% - fair, and 18.5% - poor). Only 6% could accurately describe the purpose of the dietary guidelines. While nearly everyone (97%) knew to recommend clean water, awareness of other essentials was remarkably low: just 34.5% understood food variety, 18.8% knew daily fruit and vegetable targets, and only 22.3% knew the proportion of starchy foods in meals. Furthermore, less than 70% understood sugar restrictions. Knowledge of food fortification was equally weak, with only 12.2% able to correctly describe it and 26.8% identifying fortified foods.

Conclusion: A study in Limpopo found that 83% of health professionals possess only fair to poor knowledge regarding the SAFBDGs and food fortification. Targeted, continuous education is required to empower staff to effectively support public health interventions. No conflicts of interest.

—Menu availability, nutrient composition, and dietary diversity in the registered early childhood centres in rural areas of Limpopo Province

Prof Lindelani Fhumudzani Mushaphi¹, Ms Thabelo Mphagi¹, Mr. Rhulani CHauke¹

¹University of Venda, Thohoyandou, South Africa, ²University of Venda, Thohoyandou, South Africa, ³University of Venda, Thohoyandou, South Africa

Background: Early Childhood Development centers play a vital role in providing nutritious meals, as children spend significant time in these facilities. The study aims to determine the availability of menus, nutrient composition, and dietary diversity in the registered Early Childhood Centres in rural areas of Limpopo Province.

Method: A cross-sectional study was conducted at 12 registered ECD centers in rural areas of Limpopo Province, South Africa. The two nutrition professionals observed the food handlers while they prepared and served meals. Twelve menus were analyzed using the South African Medical Research Council Food Finder website. Statistical data analysis was conducted using SPSS. Ethical clearance was obtained from the Research Ethics Committee (SHS/21/NUT/05/0511).

Results: All 12 five-day structured weekly menus were pasted on the walls of ECD centers. Seven ECD centers served four meals daily, while five served three meals per day. The dietary diversity in the five-day menu cycle included more than four food groups per day in all ECD centers. The mean nutrient intake of macronutrients was below 60% of the DRIs, while the mean intake of micronutrients was above the RDA of children aged 1 to 8 years.

Conclusion: The study indicates that while ECD centers in rural Limpopo Province offered a variety of food groups, significant gaps in nutrient adequacy, particularly macronutrients, remain.

—Responsive feeding in South Africa's nutrition transition: a socio-ecological strategy for early childhood obesity prevention

Ms Natascha Olivier^{1,2}, Dr Yolande Smit¹, Professor Rafael Pérez-Escamilla³, Professor Lisanne du Plessis¹

¹Division of Human Nutrition, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University, Stellenbosch, South Africa, ²Private Practice - Lactation Dietitian, Pretoria, South Africa, ³Yale School of Public Health, New Haven, United States of America

Introduction: Rapid nutrition transition in South Africa (SA) has contributed to a growing double burden of malnutrition, with childhood overweight and obesity rising alongside persistent undernutrition. Early childhood feeding environments play a critical role in shaping lifelong dietary behaviours and obesity risk. While national infant and young child feeding (IYCF) guidance largely emphasizes what children should eat, far less attention is given to how food is offered. Responsive feeding (RF), grounded in the WHO/UNICEF Nurturing Care Framework, emphasizes sensitive caregiver responses to children's hunger and satiety cues, supporting the development of self-regulation and healthy eating behaviours. This review explores how SA's changing food and social environments influence RF practices and the implications for future childhood obesity risk.

Methods: A narrative literature review synthesized global and SA evidence on RF, nutrition transition, IYCF practices, and socio-ecological determinants of caregiver feeding practices.

Results: RF supports children's ability to regulate food intake, promotes healthier food preferences, and contributes to improved growth and development outcomes. In contrast, non-RF practices (e.g., pressure to eat, restriction, and emotional feeding) are associated with dysregulated intake and increased obesity risk. In SA, RF is shaped by interacting socio-ecological influences. Caregiver knowledge, stress, and feeding beliefs influence responsiveness at the individual level. Intergenerational advice and cultural perceptions equating "chubbiness" with health may reinforce non-RF practices. Household food insecurity promotes reliance on inexpensive energy-dense foods and controlling feeding practices. Community food environments and aggressive marketing of ultra-processed foods further shape children's early taste preferences, while current policy guidance remains largely nutrient-focused, with limited guidance for caregiver-child feeding interactions.

Conclusion: RF represents a critical, yet underutilized strategy to mitigate rising childhood obesity while supporting healthy growth. Integrating socio-ecologically informed, culturally relevant RF guidance into SA's nutrition policies and programmes may strengthen early childhood obesity prevention in a rapidly transforming food environment.

—SAFOODS food data cleaning and coding services: A pilot study on the use of food composition data beyond traditional applications

Ms Dr Averalda Eldorine van Graan^{1,2}, Miss Nikki Lombard³, Mrs Chantel Bowers¹, Mrs Joelaine Chetty¹, Dr Malory Jumat¹, Dr Yusentha Balakrishna¹

¹SAFOODS Division, Biostatistics Research Unit, South African Medical Research Council, Tygerberg, South Africa,

²Department of Global Health, Division of Human Nutrition; Faculty of Medicine and Health Sciences; Stellenbosch University. , Cape Town, South Africa, ³Department of Consumer Science, North-West University, Potchefstroom, South Africa , Potchefstroom, South Africa

Introduction: Food composition data plays a critical role in nutrition research and practice and is increasingly applied across broader contexts such as food systems, household food security, and food aid initiatives. The global rise in hunger and food insecurity has led to the expansion of food support networks, including food banks, aiming to improve access to nutritionally adequate food. As these organizations rely primarily on donated foods, ensuring the nutritional quality and adequacy of distributed items has become a priority. This pilot project aimed to support food bank clients to determine the nutritional composition of foods distributed to food-insecure households through systematic data cleaning, coding, and analysis.

Methods: The project commenced with the receipt of a dataset containing food descriptions, items, and category codes for all distributed foods. The dataset was organized into food groups according to SAFOODS nomenclature and underwent extensive data cleaning. Similar food items were assigned standardized codes, while items absent from the SAFOODS database were recoded to closest matching entries, documenting all assumptions. Food weights were calculated using spreadsheet software, portion sizes were estimated based on national dietary guidelines, ration scales, packaging information, and the SAFOODS quantity database. The cleaned dataset was then linked to the SAFOODS database, and nutrient composition /100 g edible portion was calculated using statistical software.

Results: Over six months, 1,487 food items comprising more than 65,000 data points were processed and analyzed. A 93.2% linkage rate to the SAFOODS database was achieved, while 6.8% of items could not be directly matched. Among unmatched items, recoded foods constituted the majority, followed by combination and non-food items. Meat alternatives dominated recoded entries, reflecting evolving food trends.

Conclusion: This pilot demonstrated feasibility of nutrient analysis in food aid settings while highlighting resource demands and the need for ongoing database updates to capture emerging foods.