

P51-19
SHAPING OF HEALTH SCHOOL FOOD SCAPES THROUGH COMMUNITY ACTION

Hansen, Stine
Danish Tech University, DNK

RATIONALE & OBJECTIVES: Increasing obesity rates has increased the interest in developing school food environments, that are supportive of healthy eating. Especially in countries that traditionally have relied on the family to provide food at school, this shaping process, this has resulted in the development of new food scapes. In many countries national legislations only give little guiding to how school meal systems should be organized and new healthy eating promoting concepts has evolved as a result of local community action. However it is of great interest to assess how, the way in which these local systems are formed, influence the participation and thus the potential positive eating pattern impact. The purpose of the study is to investigate whether there is a connection between the process in which meal concept are shaped and proxies for their health impact.

MATERIALS & METHODS: 32 schools that had all voluntarily reported on the development of their local healthy eating at school concepts were analyzed and asked to participate in a telephone interview. Based on findings the schools were then grouped in 4 categories according to the way the school food concepts had been shaped and how they were operated. Subsequently one representative from each group were selected for in depth qualitative interviews. The following frame were used: experienced involvement, actors' personal accept and support of the school meal system, perceived quality of the food, coherence between demand and supply, the context of buying and eating, level of information and experienced health values. Informants were teachers, students, head principal, parent committee, and school canteen staff.

RESULTS & FINDINGS: Initial findings suggest that healthy school meal concepts at school with the highest social capital experience the best sustainability of intervention. Results indicate that if healthy school meals system is to be used by students and thus create ownership among central stakeholders community actors needs to shape the meal concepts through involvement of those concerned in healthy eating issue. Results also indicate that such broad involvement can result in a closer integration between health food service interventions and curricular interventions. Finally results indicate that top down approached to healthy eating interventions as well as "add on" healthy food service interventions are not likely to survive on a longer time perspective.

CONCLUSION: The study suggests that local community action has the potential to shape healthy eating interventions with high sustainability of intervention. The study further suggests that integrating curricular interventions with food service interventions seems to increase sustainability of interventions.

P52: Novel Approaches in Dietary Assessment I

P52-01
PREVALENCE OF NUTRIENT INADEQUACIES AND EXCESSES IN 2001 KOREAN HEALTH AND NUTRITION SURVEY BASED ON THE DIETARY REFERENCE INTAKES FOR KOREANS

Dongwoo Kim¹, Jae Eun Shim², Hyojee Joung³, Hee Young Paik¹.

¹ Department of Food and Nutrition, ² Research institute of Human Ecology, ³ Graduated School of Public Health, Seoul National University, KOR

OBJECTIVE: This study was conducted to estimate the usual intake distribution using one-day intake data from 2001 National Health and Nutrition Survey (KNHNS) after adjusting for within-individual variation.

METHOD: One-day 24-hour recall from 2001 KNHNS were adjusted for within-individual variance from two 24-hour recalls collected from 2001 KNHNS and 2002 KNNSS using ISU method. The prevalence of over and under consumption was calculated compared to KDRIs values.

RESULTS: The estimated prevalence of inadequate intakes determined by % of subjects below EAR was 73% for calcium, 41% for riboflavin and 24% for iron. For 99% of population, sodium intakes were greater than 2000mg/day. The proportion of population below EAR was reduced in adjusted data, except in calcium, which resulted in increase by 3.7%.

CONCLUSIONS: The prevalence of nutritional inadequacy and excess was over-estimated in one-day intake than adjusted intake data by adjusting within-individual variation for most nutrients in Korea.

P52-02
REPRODUCIBILITY OF A CULTURAL SENSITIVE QUANTIFIED FOOD FREQUENCY QUESTIONNAIRE - PURE-SA

Wentzel-Viljoen, Edelweiss; Kruger, Annamarie
North-West University, Potchefstroom, ZAF

RATIONAL AND OBJECTIVES: The Prospective Urban and Rural Epidemiological (PURE) study is prospective cohort study tracking changing lifestyles, risk factors and chronic disease in urban and rural areas of countries in transition. The South African leg was conducted in two areas of the North West Province typifying transition.

The objective of this paper is to report on the reproducibility of a cultural sensitive quantified food frequency questionnaire (QFFQ) used for collecting dietary information.

MATERIALS AND METHODS: A previously developed and validated QFFQ was completed by trained fieldworkers in the respondents' language of choice. Portion sizes were estimated using food portion photographs, appropriate utensils and containers and examples of specific foods. The first interview (n=1888) took place during the baseline data collection period. The second interview (n=175) was conducted within 4 – 6 weeks of the first interview.

RESULTS AND FINDINGS: Although there was a significant difference in the energy and macronutrient intake between the two periods, the correlation was moderate to high (Spearman). Between 47 and 58% of the subjects were correctly classified into the same quartile, with less than 3% grossly misclassified.

CONCLUSION: Our results show that more than one statistical method is needed to assess the reproducibility of a QFFQ and that the reproducibility appeared to be good.

P52-03
DIETARY ASSESSMENT METHODS (DAME) FOR MICRONUTRIENT INTAKE IN PREGNANT WOMEN: A SYSTEMATIC REVIEW

Ortiz-Andrellucchi, Adriana¹; Sánchez Villegas, Almudena¹; Henriquez-Sánchez, Patricia¹; Cetin, Irene²; Serra-Majem, Lluís¹

¹University of Las Palmas de Gran Canaria, Las Palmas de Gran Canaria, ESP

²University of Milan, Milan, ITA

RATIONALE & OBJETIVES: The EURRECA Network of Excellence needs clear guidelines for assessing the validity of reported micronutrient intakes amongst vulnerable population groups. A systematic literature search was conducted for studies validating the methodology used for measuring the usual dietary intake during pregnancy.

MATERIALS & METHODS: The quality of each validation study selected was assessed using a scoring system developed by EURRECA. Validation of food frequency questionnaires (FFQs) were categorized according to whether the study used a reference method that reflected short-term intake (< 7days)

long-term intake (≥ 7 days) or used biomarkers. A correlation coefficient for each micronutrient was calculated from the mean of the correlation coefficients from each study weighted by the quality of the study.

RESULTS: Seventeen papers were selected for inclusion in this review which included the validation of 15 FFQs, 2 dietary records, one diet history and an iron intake check list. Six FFQs were validated against biomarkers, presenting good correlations only for folic acid.

CONCLUSION: FFQs appear to be most reliable for measuring short-term intakes of vitamin E and B6 and long-term intakes of thiamine. Apart from folic acid, biomarkers do not add any more certainty as to the reliability of intake methods.

P52-04

SEASONAL DIFFERENCE IN NUTRIENT INTAKES AMONG JAPANESE

Mori, Keiko¹; Shimokata, Hiroshi²

¹Aichi Gakuin University, Nisshin-shi, Aichi, JPN; ²National Institute for Longevity Sciences, NCGG, Morioka-cho, Ohbu-shi, Aichi, JPN

RATIONALE & OBJECTIVE: There are four seasons in Japan, and dietary habits differ with the season. However, the seasonal differences have not been considered in nutrition survey. The purpose of this study was to examine the seasonal difference in nutrient intakes as well as the reproducibility among seasons.

METHODS: Subjects were 75 community-living men and women (33 men and 42 women aged 61.0 ± 7.3 y, 40 to 77y) who completed 3-day dietary records (3DR) in 4 different seasons (a total of 12 days). The weighed 3DR was carried out by the National Health and Nutrition Survey method during the three non-consecutive days. The seasonal differences in each nutrient intake were examined by paired t test and correlation analysis after adjusted for individual differences.

RESULTS: After adjusted for energy, 37 nutrient intakes in each season have a high reproducibility except vitamin D and vitamin B12. Median of the correlation coefficients was 0.46. The seasonal difference in nutrient intakes was not clear in energy, total protein, and total fat after excluding individual factors. However, significant seasonal differences were found in carbohydrate, vitamins, minerals, and dietary fibers.

CONCLUSION: Seasonal difference should be considered in the evaluation of nutrition intakes among Japanese.

P52-05

THE WEB-BASED FOOD BEHAVIOUR QUESTIONNAIRE (FBQ): A VALID AND POPULAR APPROACH TO SCHOOL-BASED DIETARY ASSESSMENT IN CANADA

Hanning, Rhona M.

University of Waterloo, Waterloo, Ontario, CAN

RATIONALE & OBJECTIVES: A novel FBQ was developed to collect dietary data for school-based assessment, monitoring and program evaluation.

MATERIALS & METHODS: THE FBQ incorporates: a multi-pass 24h recall of >800 foods according to food group, menu or alphabetic listings. Food icons depict choices and photographs help portion identification. Students are prompted to remember toppings, beverages, review and edit selections. Immediate feedback on intake relative to Canada's Food Guidelines is provided. Data are directly downloaded for nutrient analysis and generating feedback reports.

RESULTS & FINDINGS: Process evaluation revealed strong appeal of the FBQ among experts and students. Comparison of intakes from web-survey versus dietitian interviews (n=204 multi-ethnic students) showed good validity (ICC energy and macronutrients >0.5). Since 2002, >15,000 students have been surveyed from across Canada to document food group and

nutrient intakes relative to guidelines and monitor changes in response to programs and policy.

CONCLUSIONS: The web-based FBQ is a popular, efficient, valid approach to school-based dietary assessment used in diverse populations across Canada.

P52-06

DEVELOPMENT OF A CULTURAL SPECIFIC DIETARY ASSESSMENT TOOL FOR PEOPLE IN HIGH OESOPHAGEAL CANCER AREAS IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

Lombard, Martani J.¹; Burger, Hester M.²; Steyn, Nelia P.³; Charlton, Karen E.²

¹NICUS, Cape Town, ZAF; ²MRC, Cape Town, ZAF; ³Medical Research Council, Cape Town, ZAF

INTRODUCTION: The prevalence of esophageal cancer (OC) in rural areas of the Eastern Cape Province of South Africa is high. Fumonisin exposure is a major risk factor for OC. A culturally specific assessment tool was developed to determine maize consumption and fumonisin exposure.

METHODS: Participants mix maize meal porridge and vegetables in combined dishes. The ratio of the combined dishes varies according to availability and preference. The photographic set includes three portion sizes per dish and three ratios.

RESULTS: The RAPP tool has 33 maize based food items and dishes, with frequencies ranging from once a month to number of times per day. The tool is able to distinguish between home grown and commercially procured maize (fumonisin levels differ). Food photographs include portion sizes of dishes and ratio photographs.

CONCLUSION: The RAPP tool is culturally specific and provides the opportunity to accurately measure maize consumption. The unique approach to ratios and the differences between home grown and commercially procured maize makes the tool able to accurately measure fumonisin exposure. This in turn will provide the opportunity to incorporate food safety strategies.

P52-07

VALIDITY OF A QUALITATIVE FOOD FREQUENCY QUESTIONNAIRE FOR MEASURING NUTRIENT INTAKES IN GUATEMALAN SCHOOLCHILDREN

Marcinkevage, Jessica A.¹; Ramirez Zea, Manuel²; Zuleta, Clara²; Stein, Aryeh D.¹

Jessica A. Marcinkevage, Manuel Ramirez Zea, Clara Zuleta, Aryeh D. Stein

¹Emory University, Atlanta, GA, USA; ²Instituto de Nutricion de Centro America y Panama, Guatemala City, GTM

BACKGROUND: Dietary habits of schoolchildren in transitional societies such as Guatemala are changing. We developed a qualitative food frequency questionnaire (FFQ) for use in this population, and compared estimates from this FFQ to other dietary assessment methods.

METHODS: We interviewed 100 mothers of 7-10 year-olds attending public schools in peri-urban Guatemala on foods her child consumed the previous week. Fifty mothers completed a 75-item qualitative FFQ (FFQ1) that did not solicit information on serving size. Median portion sizes (obtained separately) were used for nutrient estimation. Fifty different mothers completed a FFQ equivalent in food items but also including portion size (FFQ2) measures. Each mother also completed 24-hr recalls of her child's food intake on 3 different days in the previous week.

RESULTS: Mean(SD) caloric intake was 1803(684), 1924(580) and 1752(514) kcal as measured by the FFQ1, FFQ2 and 24-hr recalls, respectively. Energy estimates did not differ significantly between questionnaires (p>0.1 for all pairwise comparisons). There were no differences in estimated fat, protein or carbohydrates between FFQ1 and the dietary recalls.